

**User Request Evaluation Tool (URET)
Core Capability Limited Deployment
Accuracy Scenario Weather
Forecast Deviation Study**

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Executive Summary

The Engineering and Integration Branch, ACT-250, at the FAA W. J. Hughes Technical Center (WJHTC) in Atlantic City is tasked to develop scenarios of realistic air traffic for the Accuracy Acceptance Testing of the User Request Evaluation Tool Core Capability Limited Deployment (URET CCLD).

This document presents a study of the weather data that will accompany the realistic air traffic scenarios generated by ACT-250. This study verifies that the weather data used in the scenarios for the Accuracy Acceptance Testing meets the Design Workload requirements of the URET CCLD Software Specification Document [1].

This report also documents the process ACT-250 utilized to study the weather data. The source of the weather data is the Rapid Update Cycle version 236 (RUC-236). This data requires conversion from the raw binary gridded format into a text format. The weather data is processed through several programs to reduce the initial data set into a smaller subset and convert this subset into a text format. Shareware programs and ACT-250 developed C programs have been utilized to compare sequential points within the weather data to the next sequential forecast hour. Using the ACT-250 custom programs, the deviation values for temperature and wind components are determined. The resulting deviation values are formatted and then inserted into an ORACLE database where point statistics are calculated.

After reviewing the results of this study, the weather data recorded on May 26th and May 27th of 1999 fall well within the allowable requirements defined in the URET CCLD System Specification Document [1]. Since the weather data meets the URET CCLD requirements, it is a valid source of input data for use as weather forecasts in the Accuracy Acceptance Testing of URET CCLD.

1 Introduction

1.1 Background

The Federal Aviation Administration (FAA) has contracted the Lockheed Martin Corporation Air Traffic Management Division (LMATM) to develop and deploy a Conflict Probe Decision Support Tool. The deployment is limited to seven En-route Air Traffic Control Centers to meet the FAA's Free Flight Phase 1 objective. The limited deployment of the Conflict Probe application is called the User Request Evaluation Tool Core Capability Limited Deployment (URET CCLD). The URET CCLD application is based on the MITRE developed URET Daily Use (URET DU) system installed in Indianapolis and Memphis Centers.

The FAA has tasked the Engineering and Integration Branch, ACT-250, at the FAA W. J. Hughes Technical Center in Atlantic City to supply LMATM with scenarios of realistic air traffic to perform acceptance testing of their system. In particular, these scenarios are to support the accuracy testing and will be used to verify the accuracy requirements of URET CCLD. This study verifies that the weather data used in the scenarios for the Accuracy Acceptance Testing meets the requirements of the URET CCLD Software Specification Document [1].

1.2 Purpose

This document presents a study performed by ACT-250 on the deviations between hourly weather forecasts, corresponding to the GFP Accuracy Scenarios for URET CCLD. The study was motivated by Reference 1's section on the Design Workload Scenario, which highlighted acceptable weather deviations [1].

1.3 Scope

The scope of this document is to report on the range of deviations in weather forecasts using the Rapid Update Cycle (RUC) version 236 (RUC-236). The weather files have been reviewed sequentially by hour between reporting points to quantify point statistics, such as the average, median, and standard deviation of the change in wind direction, wind speed, and temperature. These results have been compared to the Design Workload requirements of at most 50% of the center area's forecast winds to vary 29 degrees in wind direction, 19 knots in wind speed, and 4 degrees Centigrade in temperature [1].

1.4 Document Organization

The document first provides an overview of the report in Section 2. In Section 3, the document describes the data reduction process for the RUC-236 weather data. In Section 4, the database design used for the weather study is briefly described, and Section 5 describes the statistical queries to the database. Finally, Section 6 presents the statistical results obtained in the study and Section 7 provides the conclusion.

2 Overall Description of the Report

This document is the output generated from a weather study performed by ACT-250 personnel using URET's weather data for the Memphis planning region on May 26th and 27th in 1999 and determining if the variations in the weather forecasts meet URET CCLD Software Specification Document requirements [1]. The data used in this study will also be the weather source of data for the GFP Accuracy scenarios.

2.1 Statement of the Problem

The FAA has tasked ACT-250 to produce realistic air traffic scenarios for the Accuracy Testing of URET CCLD. URET CCLD uses RUC-236 data as the input weather data source. ACT-250 will study the general weather profile of the supplied RUC-236 data to determine if the point statistics gathered meet the Design Workload requirements.

2.2 Source of Weather Data

The basic source of weather for URET DU and URET CCLD is from the Rapid Update Cycle (RUC) model. The RUC model is an operational atmospheric prediction system developed by the Forecast Systems Laboratory (FSL), which is part of the National Oceanic and Atmospheric Administration (NOAA). The RUC model was developed to serve users needing short-range weather forecasts, including those in the United States aviation community. RUC data is used by the FAA in Central Weather Service Units (CWSUs), Weather and Radar Processor (WARP), Central TRACON Automation System (CTAS) and Integrated Terminal Weather System (ITWS) programs. URET DU uses RUC-211 data, URET CCLD will use RUC-236 data after it is converted to WARP-1 format. RUC data is written in the international Weather Meteorological Organization (WMO) format known as gridded binary (GRIB). Office Note #388 at <ftp://ftp.ncep.noaa.gov/pub/nmc/docs/gribed1> describes the packing format of RUC-236 data in its gridded binary format. Also, Attachment 10 of the URET D3.1 Rapid Update Cycle Data/URET Interface Description describes the RUC-236 records used by URET DU and URET CCLD [2]. The GRIB data files used in this study are in RUC-236 format, and were recorded on May 26, 1999 in the Memphis ARTCC UTC time 1000 to 100 hours on May 27, 1999 and on May 27, 1999 UTC time of 0900 to 0100 on May 28, 1999. The traffic data corresponds to the May 20, 1999 adaptation chart cycle. This weather data was chosen for analysis, since ACT-250 plans to deliver scenarios in the same time increment for the accuracy scenario task.

The RUC-2 model provides the basis for many weather data files. These files include forecast data for the 37 isobaric levels between 1000mb and 100mb in 25mb increments, forecast data for mean sea level, tropopause level, maximum wind level, freezing level, layers near the ground and layers near the surface. In this study we are only interested in the 37 isobaric levels of data, and within this data only the height, east-west wind component (u-wind), north-south wind component (v-wind), and temperature. The mean sea level value is included within this data set, but was not used in the study. RUC-236 data contains approximately 300 records of GRIB data representing forecast points across the Continental United States. The 37 isobaric levels of data are extracted from RUC-236 data, and this data is refined again using the Memphis ARTCC boundary coordinates.

3 Discussion of the Data Reduction

As stated above, RUC-236 data in its raw state contains approximately 300 records of GRIB data representing forecast points across the Continental United States; this data was refined twice before the 37 isobaric levels of data were extracted and compared for this study. The data was refined the first time to reduce the data set down to only the 37 isobaric levels of data for the Continental United States. Next it was refined further using the coordinates of the Memphis ARTCC. At this point we have the gridded binary data representing the 37 isobaric levels of data. This GRIB data needs to be deciphered and the records separated so that hourly comparisons of the forecasts can be performed. As stated earlier, we are only interested in the following records found within the 37 levels of isobaric data: the height, the east-west wind component (u-wind), the north-south wind component (v-wind), and temperature. These three components were deciphered from the RUC data by using three shareware RUC conversion programs. Next, a set of C programs written by the ACT-250 staff converted the u-wind and v-wind values into the wind speed and wind direction as needed for this study. Also, custom C programs prepared the data for insertion into an Oracle database where point statistics could easily be calculated on the rather large set of forecast point data.

3.1 RUC conversion programs

Three RUC conversion programs named wgribISO, GRIBfilter, and CONUSfilter were supplied to ACT-250 courtesy of Bill Dudzik of Advanced System Technologies Inc. (AST) for this weather study. Source code was received, compiled, and executed on the UNIX platform residing within ACT-250's Traffic Flow Management (TFM) Laboratory. The wgribISO and GRIBfilter programs were utilized to extract the 37 isobaric levels of data from the hourly RUC-236 forecasts. The RUC-236 data is the source of input to wgribISO, the output is 37isobaric levels of data for the Continental United States. This data is the source of input to GRIBfilter, the output is the 37 isobaric levels of data pertaining to the ZME ARTCC region. Next the output data generated from the GRIBfilter program is used as the input data source for wgribISO, the output produced is 112 records of textual data representing the 37 isobaric levels of data now ready for analysis. Appendix A-1 lists the progression of steps followed during this study. Appendix A-2 and A-3 show how the wgribISO and GRIBfilter programs were utilized in this study and add support information to the descriptions in Sections 3.1.1, 3.1.2 and 3.1.3. The wgribISO program and the GRIBfilter program will be described in detail in the next three sub-sections.

3.1.1 wgribISO program

The wgribISO program is a government furnished program essential to this study. The program reads GRIB data and outputs isobaric records for the Continental United States in GRIB format. This program was used as the first step (see Appendix A-1) to extract the needed isobaric records from the raw GRIB data for the Continental United States. The wgribISO program as described in Section 3.1.3 was used a second time to extract the isobaric records generated by GRIBfilter into individual records in text format ready for analysis.

To accomplish the weather study, the wgribISO program was executed multiple times. RUC-236 data files contained hourly forecasts for the Continental United States. Each hourly forecast is represented as an individual file. The wgribISO program processed each hourly forecast RUC-236 file and extracted only the isobaric records for the CONUS region. Batch processing features existed within this program, allowing us to process up to 24 hours of data with one program execution. Output files generated by wgribISO in the batch-processing mode were written in a standardized file-naming format written in GRIB format, the GRIBfilter program when using its batch-processing mode accepted this format.

3.1.2 GRIBfilter program

The GRIBfilter program is a government furnished program essential to this study. The program reads GRIB data generated by the wgribISO program, i.e. GRIB data refined to include isobaric data for the

CONUS region. The GRIBfilter program further refines the input data set, outputting isobaric records for a defined input area, i.e. the Memphis ARTCC.

To accomplish the weather study, the GRIBfilter program was the second logical processing step (see Appendix A-1) executed after running wgribISO. Batch features within this program enabled us to process the 24-hour period of data extracting the isobaric data for the coordinates defining the Memphis ARTCC. The user running the GRIBfilter program manually inputs a user-defined area or user-defined ARTCC coordinates that are used to filter the input data. The coordinates for Memphis were acquired from the WARP WINS/URET CCLD Interface Requirement Document [2] and were input into this program as the ARTCC coordinates for processing. This extracted data was written to a series of output files in a GRIB format using a predefined file name format generated within the GRIBfilter program.

3.1.3 wgribISO program used for ASCII conversion

The wgribISO program as described in Section 3.1.1 was used a second time during this study (see Appendix A-1). The program has the capability to accept GRIB data and output individual records in a specified format of either GRIB or text output. The output format of text was chosen. The wgribISO program was used this second time to extract the isobaric records generated by GRIBfilter into individual records in text format ready for analysis. The wgribISO program as used in this step, created 112 text files representing each of the isobaric records per forecast hour. A support script described in Section 3.2.2 looped through all of the 112 records per forecast hour for the 24-hour analysis period, executing the wgribISO program and creating the individual text files.

3.2 Custom Scripts

Custom scripts were written to perform basic manipulations on the RUC-236 data. Several scripts were written to manipulate the data during different phases of the weather study. Appendix A-1 shows the overall process used to convert the RUC-236 data for the weather study, and shows where the custom scripts existed within the overall process. The written scripts are described below.

3.2.1 Rename scripts

Prior to executing the wgribISO script as described in Section 3.1.1 the raw weather data needed to be renamed to meet the file name requirements specified by the wgribISO program using its batch-processing mode. A UNIX shell script was written to move the filename as it existed in a “ruc2.ThhZ.pgrbfff” format to the filename format of “ddThhZ.fff”. Figure 3.2-1 shows the filename conversion that was executed by the rename Script.

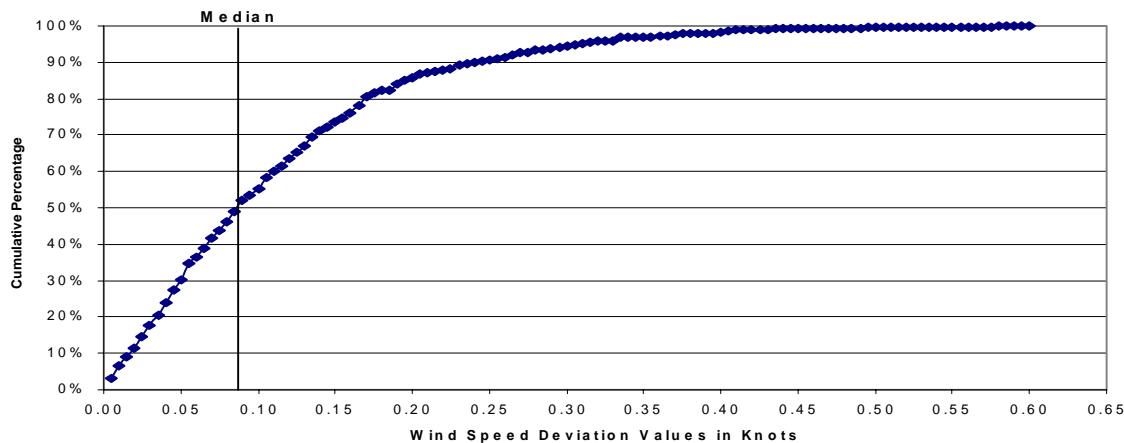


Figure 3.2-1: Rename script - file conversion

3.2.2 Txt_records script

The txt_records script simply performed the function of a loop calling the wgribISO program as described in Section 3.1.3 specifying the input filename and the output filename in a text format. The ASCII conversion performed by the wgribISO program in Section 3.1.3 had no batch processing features. The txt_records script performed the function of batch processing by looping through all 112 isobaric records for each forecast hour, for the 24-hour analysis period. When executed, this script prompts the user for a beginning hour, and an ending hour, these specifying the beginning and ending forecast hours to process. The txt_records.scr script does two important things: it first creates the filename by using the starting hour and ending hour input into the script, this hour is input into the filename format of RZMEhhZ01Z replacing the “hh” with the starting hour or ending hour; this filename is input to the wgribISO program. Secondly, the script generates a series of output filenames with the filename formats of TZMEhhZrrr.txt matching the input hour (hh) and the record number (rrr) extracted in a text format; these filenames were essential in the analysis effort to separate the hourly forecasts for the 24-hour analysis period. The txt_records script processes a 24-hour period of data. Appendix A-1 shows where this script was executed during the weather study.

3.2.3 Summ-to-ora.scr script

The summ_to_ora script was written to process the data produced by txt_records script, its output is a series of sequential files ready for insertion into a database for analysis. At this point in the analysis, the 112 isobaric records containing hourly forecasts for the Memphis ARTCC airspace exist in a text format. The 01 hour forecasts need to be compared so that point statistics may be executed on the data and we can determine if the data meet the URET CCLD Software Specification Document [1] requirements.

The summ_to_ora.scr script requires three inputs from the user: a start hour, a stop hour, and a beginning partition number for the ORACLE table. Once the required input is accepted, the script creates the input parameters for the summ-temp.c and summ-wind.c programs described in Section 3.3.1 and Section 3.3, which calculate the deviations between hourly forecast reporting point measurements. Using a script enabled quick processing of all the temperature and wind data eliminating user input errors and creating sequential output files for input into a database for statistics processing. The script will process as little as one forecast hour or multiple forecast hours, provided the correct database partition number is specified. This script was utilized to process a day’s worth of data at a time. Table 3.2-1 shows the conversion of the filenames by the summ-to-ora script, Appendix A-1 shows where this script was executed during the weather study.

Table 3.2-1: Files created by the summ-to-ora script

<i>Input filename</i>	<i>Description</i>
TZMEhhZrnn.txt	Input filename for the summ-to-ora script where hh represents the hour and nn represents the record number.
<i>Output filename</i>	<i>Description</i>
ORA_h##_temp.dat	All the records for the hour ## were processed creating three output files in text format: a temperature file, a u-wind file, and a v-wind file.
ORA_h##_windu.dat	Each file contained the deviation values for the 37 different millibar forecasts for each point in that data hour.
ORA_h##_windv.dat	

3.2.4 Cat-ora-files script

The output from the summ_to_ora.scr script as described in Section 3.2.3, was several text files containing deviation values and required parameters for searching in a database, such as hour, altitude, partition number and the type of data recorded. At this point there existed a single temperature, u-wind and v-wind file for each comparison hour. The cat-ora-files.scr script was written to accomplish this task. The cat-ora-files.scr script requires the user to input three items: a start hour, an ending hour, and a partition number where the data is to begin. Once the required input is accepted and verified, the script concatenates by forecast hour the temperature and wind data files created by summ-temp.c and summ-wind.c. These three

files needed to be combined into a single file for insertion into the database, thus matching the database design described in Section 4. Table 3.2-2 shows the conversion of the files produced by this script. Appendix A-1 shows the logical position of this script during the weather study.

Table 3.2-2: Example of filenames combined to create single input file for insertion into ORACLE

ORA_h10_temp.dat	→	ORA_p##_h10.dat
ORA_h10_windu.dat	→	ORA_p##_h10.dat
ORA_h10_windv.dat	→	ORA_p##_h10.dat

Each hour of temperature, u-wind, and v-wind data was concatenated together to form a new file named ORA_p##_h10.dat where ## represents the partition number in the database where this data is to be inserted.

3.2.5 SQL insertion script

The concatenated files generated by the cat-ora-files script in Section 3.2.4, were the source of input to a Structured Query Language (SQL) used to insert the files into the created ORACLE weather database. Each file was inserted into the database using a control script. Twenty-eight scripts were utilized, one script representing each of the weather comparison hours used for the study. Table 3.2-3 shows and example of a control script for the hour 10:00 am data on 5/26/99 inserted into partition 0 of the database.

Table 3.2-3: Example of SQL control script

```
LOAD DATA – load data for temperature and wind values into wthrdev_tbl
INFILE ORA_p1_h10.dat
INTO TABLE wthrdev_tbl partition (hr0)
FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY ""
(deviation,dev_type,alt,hour,part_no)
```

3.3 Custom Programs

In Section 3.2.3 the sum-to-ora script was described. This script called custom programs called summ_wind and summ_temp to compare the sequential forecasts and calculate the deviation value between the forecasts. Sections 3.3.1 and 3.3.2 will describe the processing performed by the summ-temp and the summ-wind programs written by Betty Kelly of CTA, Inc. At this point the RUC-236 data being processed is now in text format.

3.3.1 Summ-temp program

The summ-temp program is a C program written to process a 24-hour period of temperature data. Temperature data was recorded for each hour, for each point within the Memphis ARTCC airspace. Thirty-seven temperature forecasts exist for each forecast hour, the thirty-seven files represent the temperature forecast at 1000 millibars, 975 millibars, 950 millibars, 900 millibars right down to 100 millibars. The summ-temp program compares the current forecast hour to the next forecast hour at each of the thirty-seven different millibar levels and calculates the deviation between the current temperature and the forecast temperature. The resulting deviation values are written into a formatted string to match the database format of: deviation, deviation_type, altitude, hour, and partition number and then written to file, this file will be used as direct input to the database. (The database format is described in Section 4.) The recorded values will be used to generate point statistics on the data.

The summ-temp program is called from within the summ-to-ora.scr script. Table 3.3-1 describes the inputs to the summ-temp program. The summ-temp program cycles through the 37 separate temperature files that

exist for a single forecast hour. The 37 files represent temperature forecast data starting at 1000 millibars and descending down to 100 millibars. Using the input parameters, the program constructs the complete filenames for the forecast and second forecast hours for the temperature data, then cycles through the two files calculating the deviation in temperature values between the current forecast and the next projected forecast, then writing the deviation data with other formatted data in the database input format.

Table 3.3-1: Inputs to the summ-temp.c program

```
summ-temp $hr $nxthr ORA_h$hr\temp.dat $partno
```

<i>Input</i>	<i>Description</i>
Hr	First forecast hour used for the comparison.
Nxthr	Second forecast hour used for the comparison.
ORA_h\$hr\temp.dat	Output wind-u data file. Files are grouped by forecast hour.
\$partno	ORACLE table partition number.

3.3.2 Summ-wind program

The summ-wind program like the sum-temp program, is a C program written to process a 24-hour period of u-wind and v-wind data. U-wind and v-wind data was recorded for each hour, for each point within the Memphis ARTCC airspace. Thirty-seven u-wind and v-wind forecasts exist for each forecast hour, the thirty-seven files represent the temperature forecast at 1000 millibars, 975 millibars, 950 millibars, and 900 millibars right down to 100 millibars. The summ-wind program reads the u-wind and v-wind values and calculates the wind speed and the wind direction values for each forecast at each of the 37 different millibar levels. It then calculates the deviation between the current and forecast hour for the wind speed and wind direction forecasts. The resulting deviation values are written into a formatted string to match the database format of: deviation, deviation_type, altitude, hour, and partition number and then written to file, this file will be used as direct input to the database. The recorded values will be used to generate point statistics on the data.

The summ-wind.c program was written to process a 24-hour period of u-wind and v-wind data. The wind magnitude deviation, and the wind direction deviation values are calculated within the program using the u-wind and v-wind values. Four input files are required for this program, two for the u-wind comparison and two for the v-wind comparison. The resulting wind magnitude deviation and wind direction deviation values are written to a formatted string to match the database format of: deviation, deviation_type, altitude, hour, and partition number and then written to file to calculate point statistics in the database.

The summ-wind program is called from within the summ-to-ora script. The summ_wind.c program requires the following inputs as shown in Table 3.3-2. Using these input parameters, the program constructs the input filenames required by the summ-wind program, then cycles through the four files calculating the wind direction and wind magnitude deviations. This program processes the thirty-seven records for each reporting point in the ZME airspace, and writes the output deviation data to file.

Table 3.3-2: Inputs to the summ-wind.c program

```
summ-wind $hr $nxthr ORA_h$hr\windu.dat ORA_h$hr\windv.dat $partno
```

<i>Input</i>	<i>Description</i>
Hr	First forecast hour used for the comparison.
Nxthr	Second forecast hour used for the comparison.
ORA_h\$hr\windu.dat	Output wind-u data file. Files are grouped by forecast hour.
ORA_h\$hr\windv.dat	Output wind-v data file. Files are grouped by forecast hour.
\$partno	ORACLE table partition number.

4 Design of Database

The current weather study required a database and design that would accommodate very large quantities of data. ORACLE was chosen for this task, and a design using partitioned tables was executed. The choice of a partitioned table in ORACLE permitted the support of very large database tables by decomposing them into smaller and more manageable pieces, i.e. partitions. The advantage of using partitioned tables, is they can be accessed by several fields: a partition number, an index, or any combination of the two. The table is partitioned by hour. Each partition within the weather table contains the deviation data for temperature, u-wind, and v-wind for a comparison hour. Deviation values were recorded for each point in the Memphis defined region and each point had 37 isobaric levels recorded.

The partitioned table contained twenty-eight partitions. There were fourteen hours of compared data recorded for 5/26/99, and fourteen hours of compared data recorded for 5/27/99. Fields existed within this table for the deviation, the deviation type, an associated altitude, the comparison hour, and the partition number. Each partition contained deviation data for the associated wind speed, wind direction and temperature values obtained from the forecasts during that comparison hour. Table 4.1-1 shows the correlation of the partition numbers to the forecast hours used in this weather study. Table 4.2-1 shows the definition of the weather table used in this weather study, Table 4.3-1 displays the definitions of the individual fields found within the table.

4.1 Correlation Between Table Partition Numbers and Forecast Data

Table 4.1-1 shows the correlation between the table partition number, the date, and the forecast hours used in the comparison. For example, the first entry represents the 1000 to 1100 comparison hour on 5/26/99; this partition contains all the deviation values recorded between reporting points during this hour for wind, and temperature. The field labeled TBL-Hr was the key used to query the database for a particular forecast hour of data. The order of data within this table is not important as you can see the data in TBK_Hr 22 is out of sequence with the other fields.

Table 4.1-1: Correlation Between Table Partition Numbers and Forecast Data

TBL_Hr	DATE	Data hour start	Data hour end	TBL_Hr	DATE	Data hour start	Data hour end
0	5/26/99	1000	1100	14	5/27/99	2400	100*
1	5/26/99	1100	1200	15	5/27/99	900	1000
2	5/26/99	1200	1300	16	5/27/99	1000	1100
3	5/26/99	1300	1400	17	5/27/99	1100	1200
4	5/26/99	1400	1500	18	5/27/99	1200	1300
5	5/26/99	1500	1600	19	5/27/99	1300	1400
6	5/26/99	1600	1700	20	5/27/99	1400	1500
7	5/26/99	1700	1800	21	5/27/99	1500	1600
8	5/26/99	1800	1900	22	5/28/99	2400	100
9	5/26/99	1900	2000	23	5/27/99	1700	1900
10	5/26/99	2000	2100	24	5/27/99	1900	2000
11	5/26/99	2100	2200	25	5/27/99	2000	2100
12	5/26/99	2200	2300	26	5/27/99	2100	2200
13	5/26/99	2300	2400	27	5/27/99	2200	2300
				28	5/27/99	2300	2400

* represents there was no data to process for this particular comparison hour.

4.2 Oracle Definition of Partitioned Weather Table

Referring to Table 4.2-1 below, the SQL command creates was utilized to create a table by the name of wthrdev_tbl. This table then was partitioned into twenty-eight partitions using the definition shown below. Each partition corresponds to a comparison hour used in the analysis. Queried data can be accessed by partition as well as by any of the fields in the data such as deviation, dev_type, alt, or hour.

Table 4.2-1: ORACLE Definition of Partitioned Weather Table

```
create table wthrdev_tbl
(deviation NUMBER(8,4), dev_type CHAR(1), alt NUMBER, hour NUMBER, part_no NUMBER(3))
PARTITION BY RANGE (hour)
(PARTITION HR0 VALUES LESS THAN (1),
PARTITION HR1 VALUES LESS THAN (2),
PARTITION HR2 VALUES LESS THAN (3),
PARTITION HR3 VALUES LESS THAN (4),
PARTITION HR4 VALUES LESS THAN (5),
PARTITION HR5 VALUES LESS THAN (6),
PARTITION HR6 VALUES LESS THAN (7),
PARTITION HR7 VALUES LESS THAN (8),
PARTITION HR8 VALUES LESS THAN (9),
PARTITION HR9 VALUES LESS THAN (10),
PARTITION HR10 VALUES LESS THAN(11),
PARTITION HR11 VALUES LESS THAN(12),
PARTITION HR12 VALUES LESS THAN(13),
PARTITION HR13 VALUES LESS THAN(14),
PARTITION HR14 VALUES LESS THAN(15),
PARTITION HR15 VALUES LESS THAN(16),
PARTITION HR16 VALUES LESS THAN(17),
PARTITION HR17 VALUES LESS THAN(18),
PARTITION HR18 VALUES LESS THAN(19),
PARTITION HR19 VALUES LESS THAN(20),
PARTITION HR20 VALUES LESS THAN(21),
PARTITION HR21 VALUES LESS THAN(22),
PARTITION HR22 VALUES LESS THAN(23),
PARTITION HR23 VALUES LESS THAN(24),
PARTITION HR24 VALUES LESS THAN(25),
PARTITION HR25 VALUES LESS THAN(26),
PARTITION HR26 VALUES LESS THAN(27),
PARTITION HR27 VALUES LESS THAN(28),
PARTITION HR28 VALUES LESS THAN (MAXVALUE))
```

4.3 ORACLE Definition of Partitioned Weather Table

Illustrated below in Table 4.3-1 is the definition of the fields found within the weather deviation table. The table is called wthrdev_tbl and contains five fields named deviation, dev_type, alt, hour, and part_no respectively. This basic table was then converted into a partitioned database in Oracle, the definition of the partitioned table is shown in Table 4.2-1. Listed below is the field name and declaration as required by Oracle, followed by a general definition of this field for the general user.

Table 4.3-1: ORACLE Definition of Partitioned Weather Table

Name of table: wthrdev_tbl		
Field name	Field Declaration	Definition
DEVIATION	NUMBER(8,4)	A number value of 8 digits length with 4 digits of precision. This value represents the calculation of the deviation value matching the DEV_TYPE. This value generally represents the difference between the original reported value minus the reported value in the next hourly forecast. Temperature values were calculated directly, the wind speed and direction values were first calculated using the u-wind and v-wind coordinates then converted to the correct format, then the difference was calculated.
DEV_TYPE	CHAR(1)	A single character defining the type of data stored, “D” represents wind direction, “S” represents wind speed, and “T” represents temperature.
ALT	NUMBER	A number value representing the millibar reading of atmospheric pressure of this type of data.
HOUR	NUMBER	A number value representing the hour corresponding to the data recorded. Hours recorded were numbered from 0 to 28 and are listed in Table 4.1.
PART_NO	NUMBER(3)	Partition number corresponding to its position in the partitioned table structure. Field used for accessing a specific database time period.

5 Database Queries

The deviation data for temperature, u-wind, and v-wind are contained within a partitioned database in ORACLE. Point statistics such as the average, median, and standard deviation were calculated using Structured Language Queries. The SQL queries also permitted the “real-time” conversions for u-wind and v-wind values while calculating point statistics. Table 5.1-1 shows examples of actual SQL queries submitted to the ORACLE database to produce the point statistics.

A series of SQL queries were created, then executed on the temperature, wind direction and wind speed deviation values that existed within the ORACLE database. Three general SQL files were created, one for temperature, wind direction and wind speed. Each SQL file contained formatting commands, then a series of query commands to collect the deviation data required for this study. Tables 5.1-1, 5.2-1, and 5.3-1 give an example of the SQL scripts utilized to collect the point statistics for the temperature, wind speed and wind direction data. First general statistics were gathered by using a SQL script; the returned statistics were spooled to a text file and then imported directly into this document as tables. The charts shown in Sections 6.2, Section 6.3 and Section 6.4 were generated in this manner. The SQL results were spooled to text files and then imported into Microsoft Excel where the charts shown in Section 6.1 were created.

5.1 Example of Temperature Queries from Partitioned Table

The following excerpt in Table 5.1-1 is the actual SQL script used to partition the weather database to gather point statistics on temperature data. Output from the queries is formatted by the set commands found in the beginning of the file and are written to an ASCII filename by the spool command. Data shown below is collected for the first day by the phrase “hour<14”, and the second day by using the phrase “hour>14”.

Table 5.1-1: Example of Temperature Queries from Partitioned Table

```
set colsep ','
set pagesize 100
set linesize 160
spool stemp1.lis
select avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour<14;
select avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour>14;
spool off
spool stemp2a.lis
select alt,avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour<14 group by alt;
spool off
spool stemp2b.lis
select alt,avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour>14 group by alt;
spool off
spool stemp3a.lis
select hour,avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour < 14 group by hour;
spool off
spool stemp3b.lis
select hour,avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour > 14 group by hour;
spool off
spool stemp4a.lis
select hour, alt,avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour < 14 group by hour, alt;
```

```

spool off
spool stemp4b.lis
select hour, alt,avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'T' and hour > 14 group by hour, alt;
spool off

```

5.2 Example of Wind Direction Queries from Partitioned Tables

The following excerpt in Table 5.2-1 is the actual SQL script used to partition the weather database to gather point statistics on wind direction data. Output from the queries is formatted by the set commands found in the beginning of the file and are written to an ASCII filename by the spool command. Data shown below is collected for the first day by the phrase “hour<14”, and the second day by using the phrase “hour>14”.

Table 5.2-1: Example of Wind Direction Queries from Partitioned Tables

```

set colsep ','
set pagesize 100
set linesize 160
spool wd1.lis
select avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour < 14;
select avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour >14;
spool off
spool wd2a.lis
select alt, avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour < 14 group by alt;
spool off
spool wd2b.lis
select alt, avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour > 14 group by alt;
spool off
spool wd3a.lis
select hour, avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour < 14 group by hour;
spool off
spool wd3b.lis
select hour, avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour > 14 group by hour;
spool off
spool wd4.lis
select hour, alt, avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour > 14 group by hour,alt;
spool off
spool wd5.lis
select hour, alt, avg(abs(deviation)), stddev(abs(deviation)), count(all deviation), max(abs(deviation)),
min(abs(deviation)) from wthrdev_tbl where dev_type = 'D' and hour > 14 group by hour,alt;
spool off;

```

5.3 Example of Wind Speed Queries from Partitioned Tables

The following excerpt in Table 5.3-1 is the actual SQL script used to partition the weather database to gather point statistics on wind speed data. Output from the queries is formatted by the set commands found in the beginning of the file and are written to an ASCII filename by the spool command. Data shown below is collected for the first day by the phrase “hour<14”, and the second day by using the phrase “hour>14”. The conversion value of 0.194388 shown in this set of queries represents the conversion of wind speed from decimeters/sec to knots.

Table 5.3-1: Example of Wind Speed Queries from Partitioned Tables

```
set colsep ','  
set pagesize 100  
set linesize 160  
spool ws1.lis  
select avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour<14;  
select avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour>14;  
spool off  
spool ws2a.lis  
select alt, avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour<14 group by alt;  
spool off  
spool ws2b.lis  
select alt, avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour<14 group by alt;  
spool off  
spool ws3a.lis  
select hour, avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour<14 group by hour;  
spool off  
spool ws3b.lis  
select hour, avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour<14 group by hour;  
spool off  
spool ws4a.lis  
select hour, alt, avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour < 14 group by hour,alt;  
spool off  
spool ws4b.lis  
select hour, alt, avg(abs(deviation*0.194388)), stddev(abs(deviation*0.194388)), count(all deviation),  
max(abs(deviation*0.194388)), min(abs(deviation*0.194388)) from wthrdev_tbl where dev_type = 'S' and  
hour > 14 group by hour,alt;  
spool off
```

6 Statistical Results

The deviation data residing within the partitioned ORACLE tables was used to calculate point statistics of the deviation data for temperature, wind speed and wind direction by day. Items such as the average, median and standard deviation were calculated for temperature, wind speed, and wind direction using a SQL query to the partitioned database of deviation values. The results presented are partitioned first by day in Section 6.1, then by altitude and day in Section 6.2.

The term deviation in temperature is defined for this study as the current temperature forecast at any one of the millibar levels from 1000 MB to 100 MB minus the projected temperature forecast for the next hour at the same millibar level. The difference of these two degrees Kelvin values is termed as the deviation in temperature or temperature deviation. Likewise, the deviation in wind speed and wind direction is defined for this study as the current wind speed or wind direction forecast at any one of the millibar levels from 1000 mb to 100 mb minus the projected forecast for the next hour for the same millibar level. The difference of wind speed values in decimeters per second was converted into knots for the comparison and is termed as the deviation in wind speed. The wind direction deviation values are shown in degrees.

When calculating the deviation statistics, the avg(deviation) value was used when calculating the average, standard deviation, minimum deviation and maximum deviation values of the temperature, wind speed and direction deviation data. When analyzing the data, it was found that two holes existed in the study data on 5/26/99 from midnight to 1:00 AM and on 5/27/99 from 4:00 PM until 5:00 PM. So deviation calculations from midnight to 1:00 AM and 3:00 PM until 5:00 PM are missing; the comparison in deviation values resume at 6:00 PM to the next forecast hour, i.e. 7:00 PM. The missing hours are noted on all of the charts.

6.1 Statistical Results for the Day

Tables 6.1-1 and 6.1-2 shown below list the average deviation, the standard deviation, the maximum deviation value and the minimum deviation value for temperature, wind direction and wind speed as queried from the database on 5/26/99 and 5/27/99. The absolute value of each deviation value was used in the calculations.

Table 6.1-1: Statistical Results for 5/26/99

	Average Deviation	Standard Deviation	Max. Deviation	Min. Deviation
Temperature	.277330077 °K	.242776781 °K	1.7 °K	0 °K
Wind Direction	1.28086274 degrees	1.13758211 degrees	6.1962 degrees	0 degrees
Wind Speed	.111450483 knots	.095383806 knots	.575291286 knots	0 knots

Table 6.1-2: Statistical Results for 5/27/99

	Average Deviation	Standard Deviation	Max. Deviation	Min. Deviation
Temperature	.194594595 °K	.224403449 °K	1.7 °K	0 °K
Wind Direction	1.57359749 degrees	1.45406803 degrees	14.3492 degrees	0 degrees
Wind Speed	.139010499 knots	.131292362 knots	.920193914 knots	0 knots

The next six pages show the deviations in temperature, wind direction, and wind speed in several different formats. First the general deviation is shown for May 26, 1999 and May 27, 1999 in a percentage format. Next the cumulative deviation is shown for May 26, 1999 and May 27, 1999. There are a set of charts for temperature, wind direction and wind speed deviation values.

Figures 6.1-1 and 6.1-2 show a range of temperature deviation values ranging from 0.05 degrees Kelvin to 1.75 degrees Kelvin for each day. The information is presented in a cumulative format in Figure 6.1-3 representing the data for May 26, 1999 and Figure 6.1-4 representing the data for May 27, 1999. The median values drawn on these charts meet the Design Workload requirements of at most 50% of the center area's forecast temperatures to vary 4 degrees Centigrade [1].

Figures 6.1-5 and 6.1-6 show a range of deviation in the wind direction ranging from 0.5 degrees and 6.5 degrees on May 26, 1999; on May 27, 1999 the range of deviation values was between 0.25 and 14.5 degrees, respectively. The information is presented in a cumulative format in Figure 6.1-7 representing the data for May 26, 1999 and Figure 6.1-8 representing the data for May 27, 1999. The median values drawn on these charts meet the Design Workload requirement of at most 50% of the center area's forecast wind direction to vary by 29 degrees [1].

Figures 6.1-9 and 6.1-10 show a range of deviation in the wind speed ranging from 0.0 knot to 0.6 knots on May 26, 1999; on May 27, 1999 the range of deviation values was between 0 and 1 knots. The information is presented in a cumulative format in Figure 6.1-11 representing the data for May 26, 1999 and Figure 6.1-12 representing the data for May 27, 1999. The median values drawn on these charts meet the Design Workload requirement of at most 50% of the center area's forecast wind speed to vary by 19 knots [1].

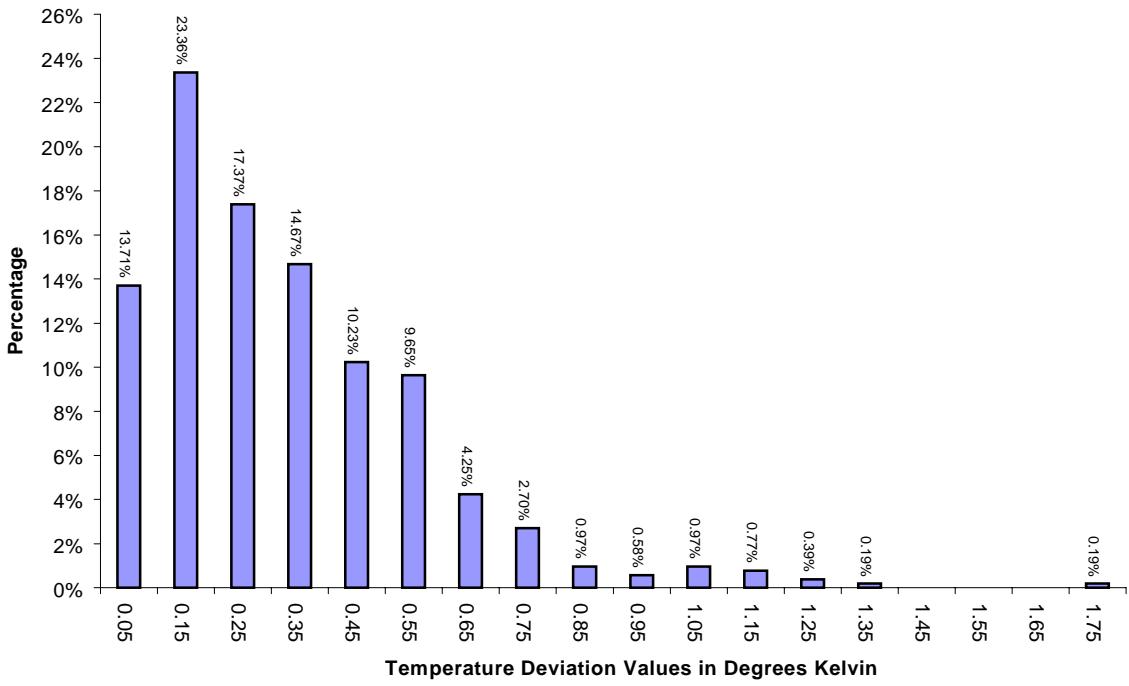


Figure 6.1-1: Deviation in Temperature Forecasts for 5/26/99

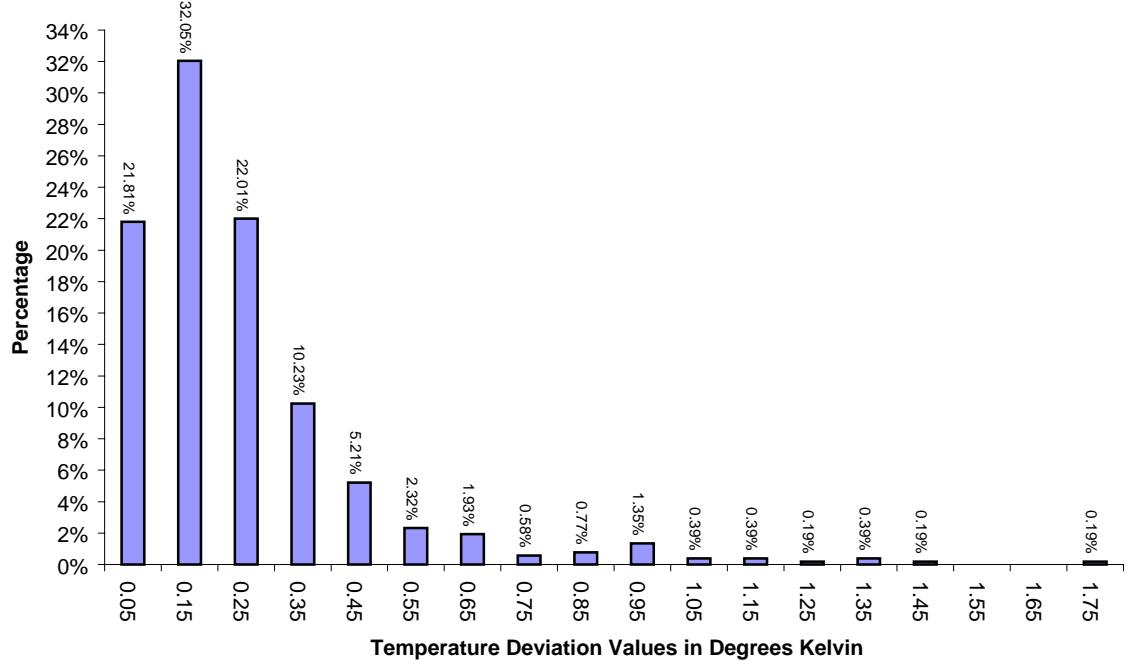


Figure 6.1-2: Deviation in Temperature Forecasts for 5/27/99

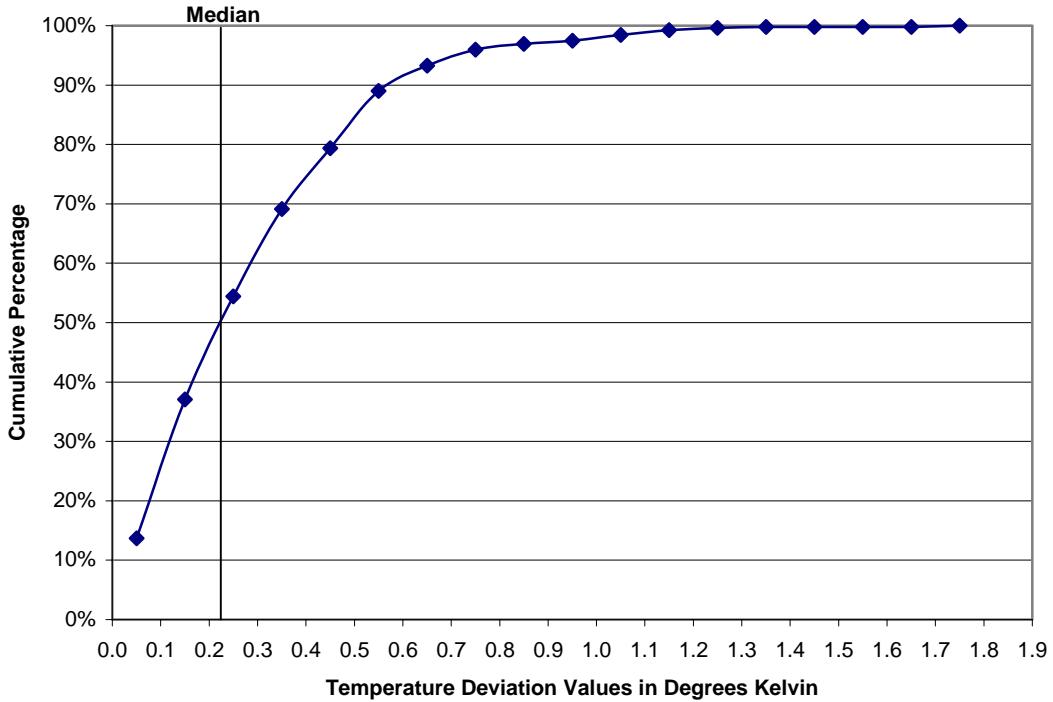


Figure 6.1-3: Cumulative Deviation in Temperature Forecasts for 5/26/99

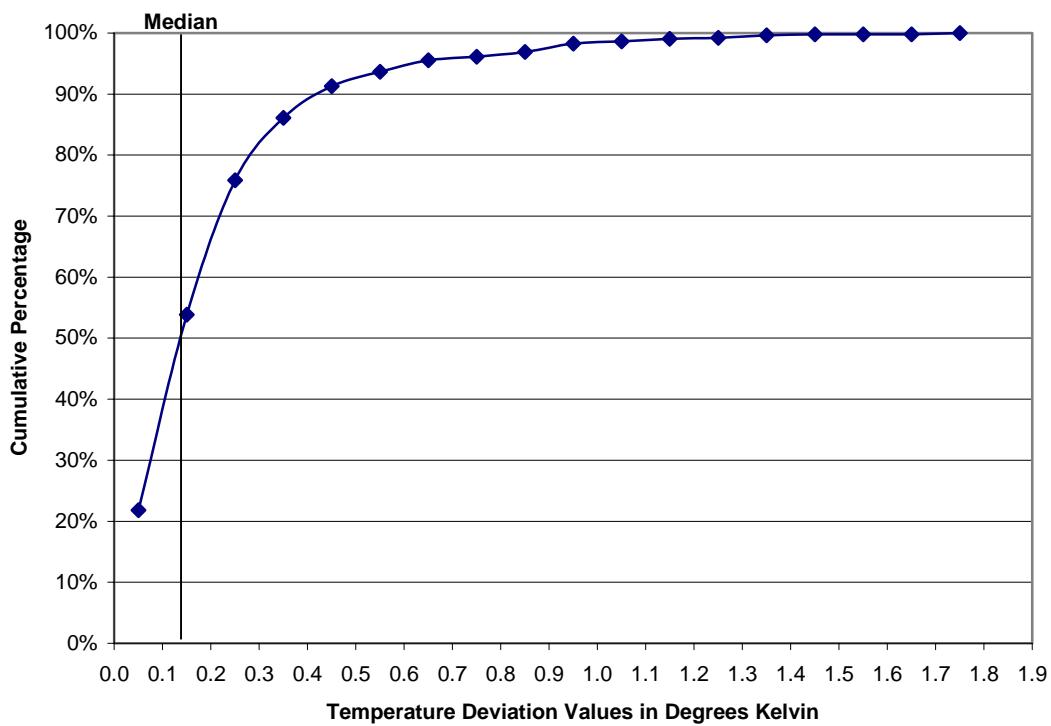


Figure 6.1-4: Cumulative Deviation in Temperature Forecasts for 5/27/99

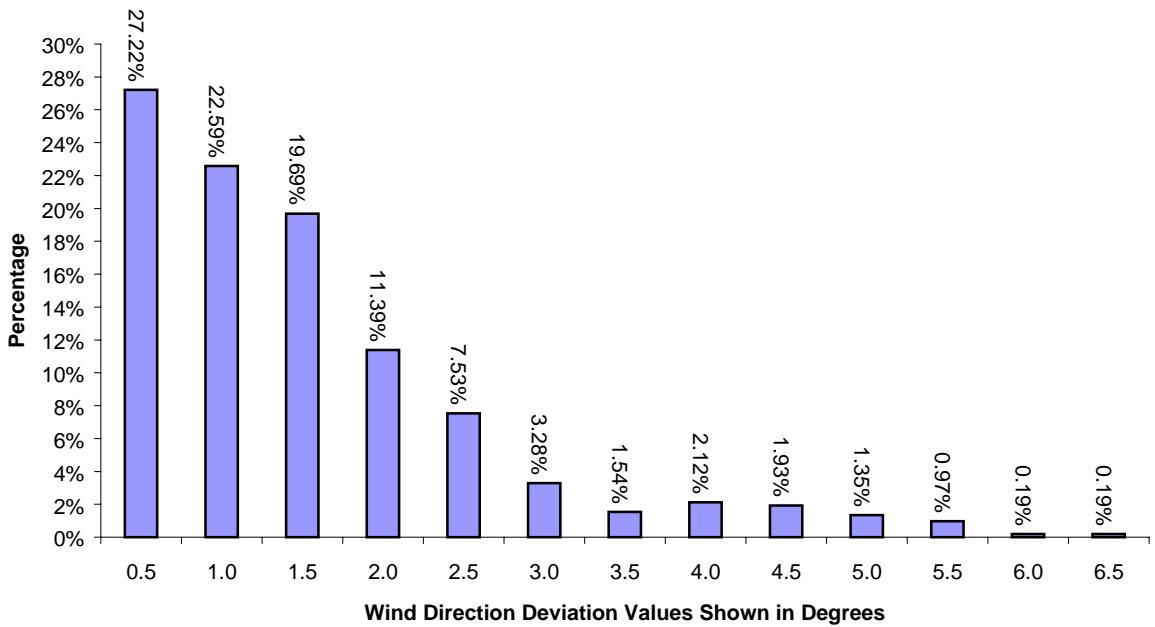


Figure 6.1-5: Deviation in Wind Direction Forecasts for 5/26/99

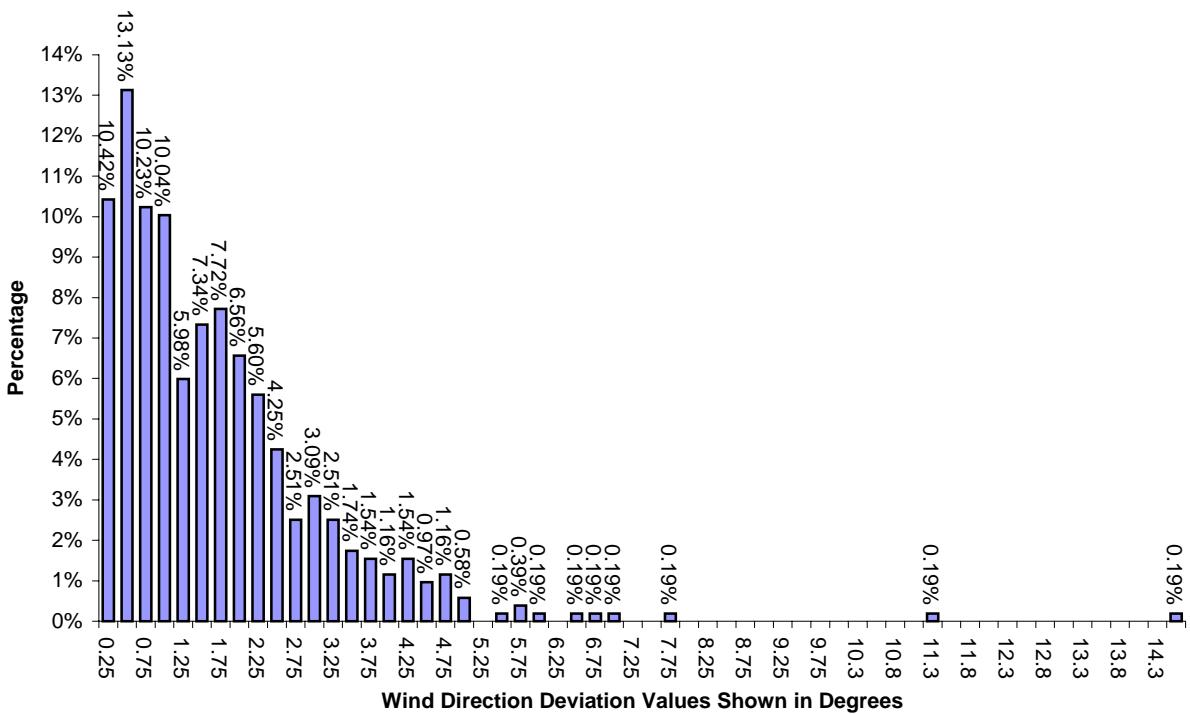


Figure 6.1-6: Deviation in Wind Direction Forecasts for 5/27/99

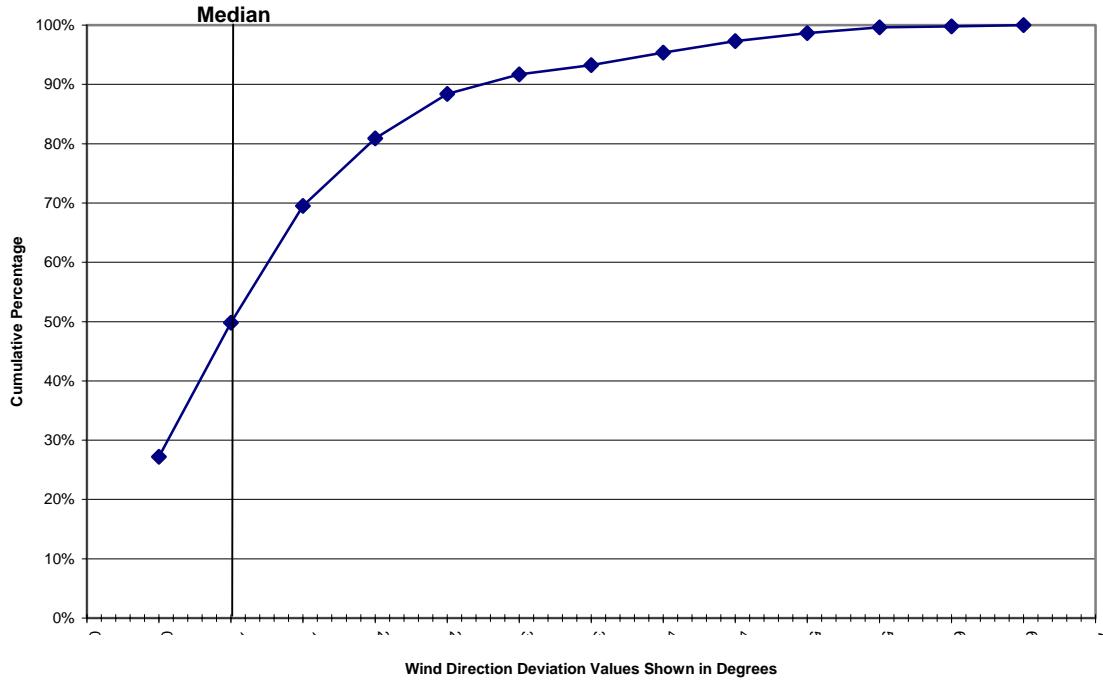


Figure 6.1-7: Cumulative Deviation in Wind Direction Forecasts for 5/26/99

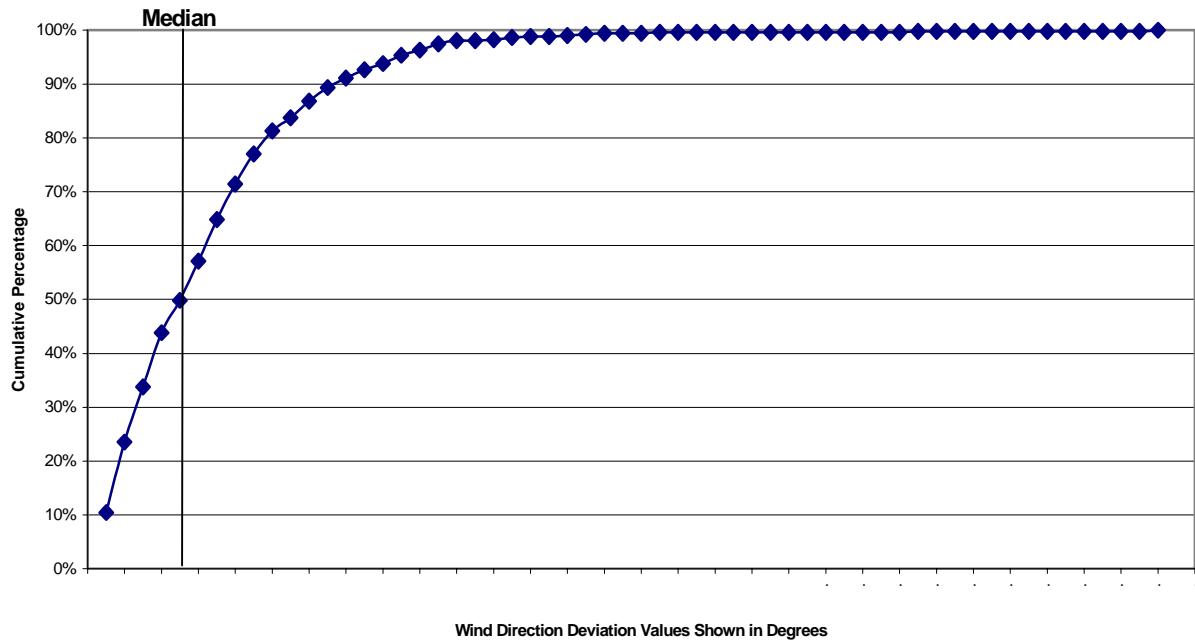


Figure 6.1-8: Cumulative Deviation in Wind Direction Forecasts for 5/27/99

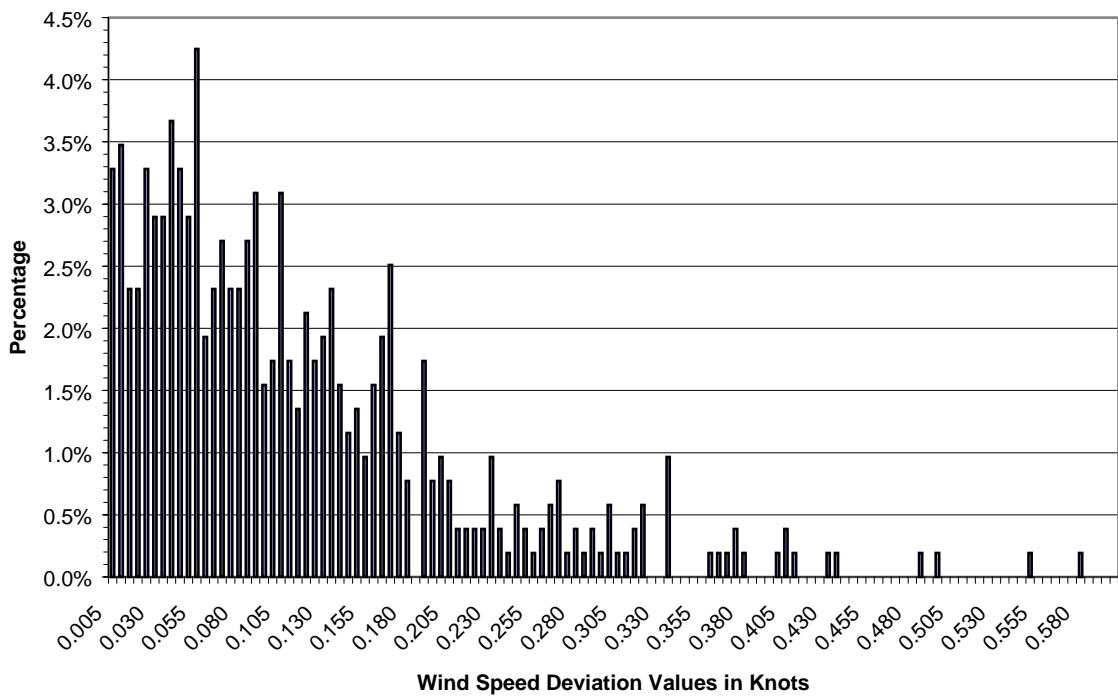


Figure 6.1-9: Deviation in Wind Speed Forecasts for 5/26/99

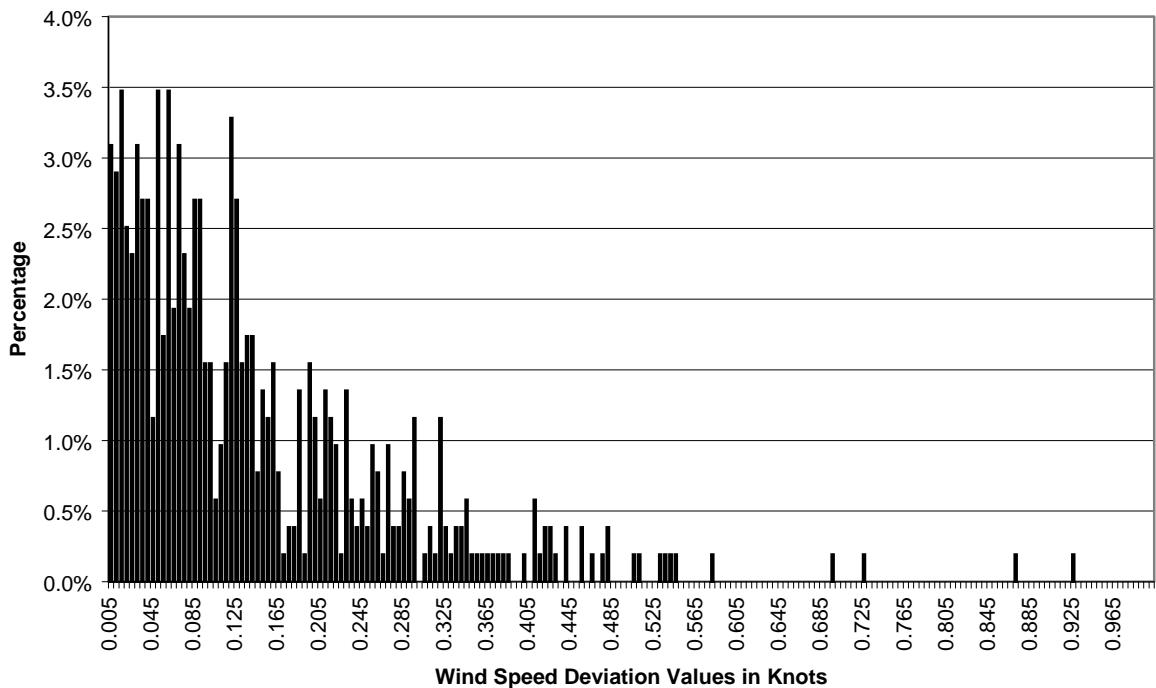


Figure 6.1-10: Deviation in Wind Speed Forecasts for 5/27/99

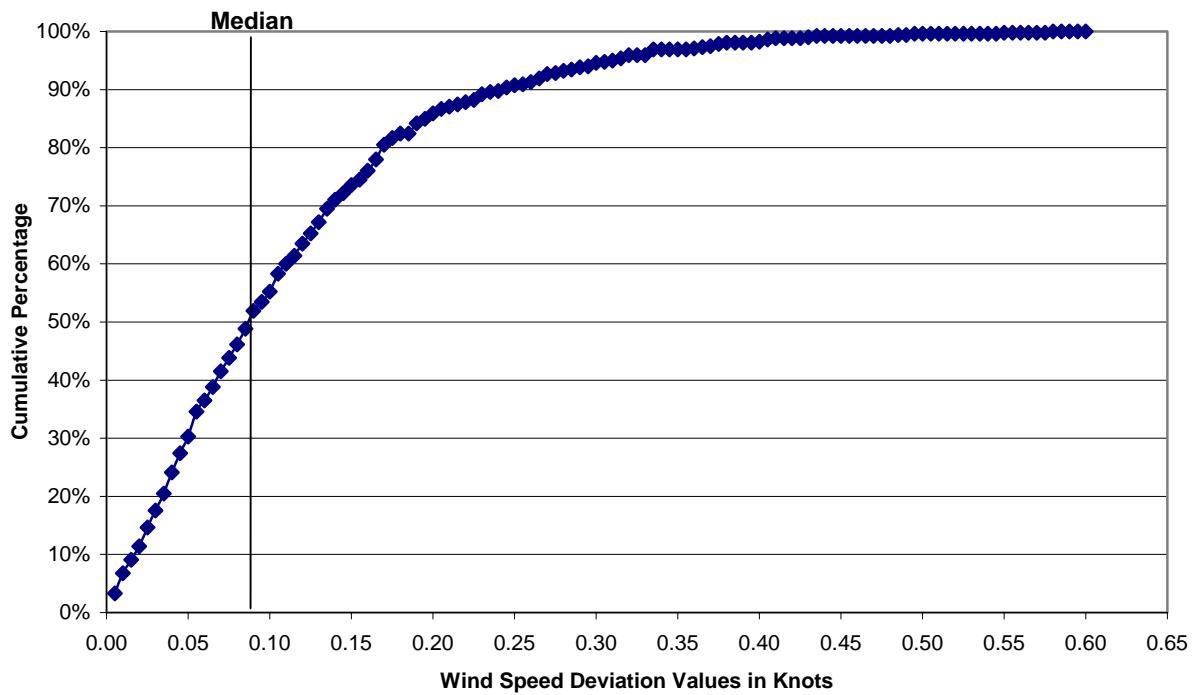


Figure 6.1-11: Cumulative Deviation in Wind Speed Forecasts for 5/26/99

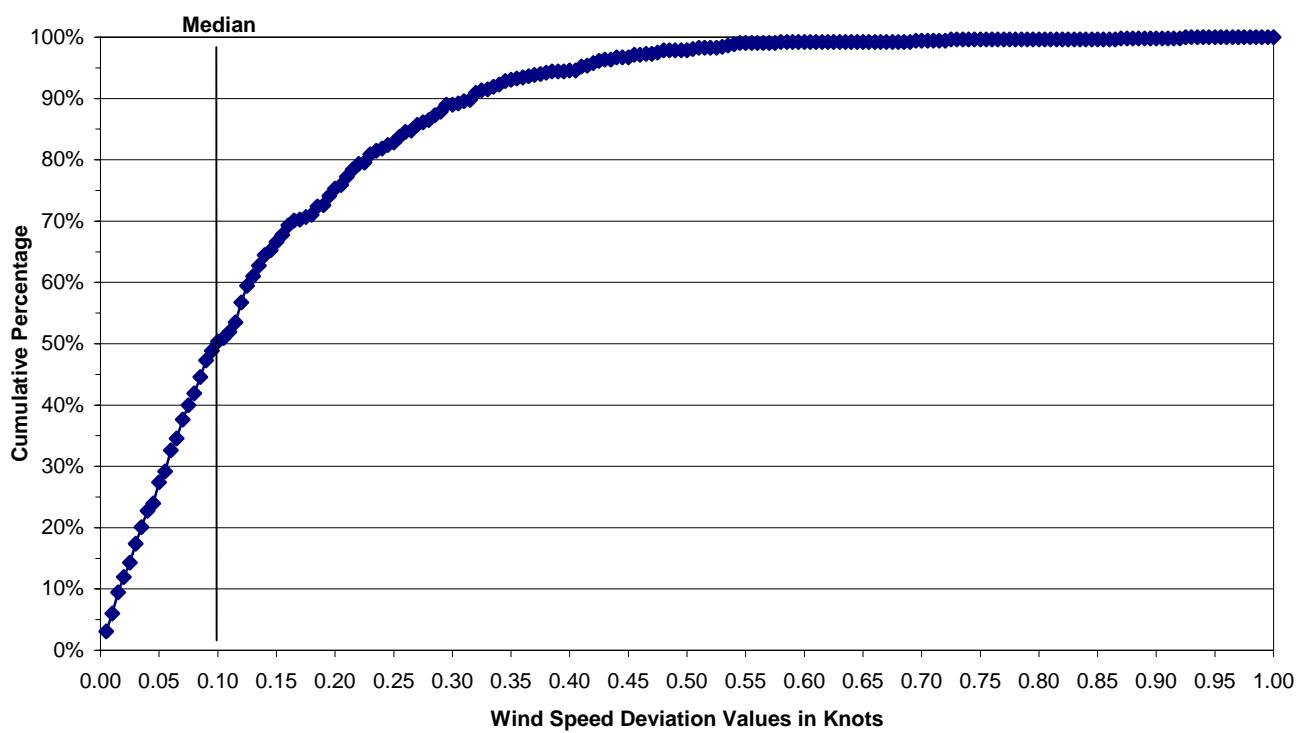


Figure 6.1-12: Cumulative Deviation in Wind Speed Forecasts for 5/27/99

6.2 Statistical Results grouped by Altitude

This section presents the statistical results produced from querying the partitioned weather database to calculate the average deviation, standard deviation, maximum deviation and minimum deviation for each of the three types of deviation data (i.e. temperature, wind speed and wind direction). The results are grouped by day and then by altitude.

Table 6.2-1 and Table 6.2-2 show the average deviation, standard deviation, maximum deviation and minimum deviation values calculated with the temperature deviation values for May 26, 1999 and May 27, 1999 respectively. The results shown below are grouped by altitude. The table also shows the associated pressure in millibars and its equivalent altitude in feet associated with the deviation values.

Table 6.2-1: Statistical Results Grouped by Altitude for Temperature on 5/26/99

Altitude (ft)	Pressure (Mb)	Average Deviation (°K)	Standard Deviation (°K)	Max. Deviation (°K)	Min. Deviation (°K)
52,947	100	.107142857	.059333598	.2	0
48,448	125	.178571429	.178000793	.6	0
44,073	150	.264285714	.205661691	.6	0
41,074	175	.092857143	.088353112	.3	0
38,623	200	.285714286	.279944375	.9	0
36,498	225	.35	.279670858	1.2	.1
34,015	250	.314285714	.327018089	1.1	0
31,975	275	.235714286	.187493298	.6	0
30,080	300	.185714286	.19949106	.7	0
28,308	325	.135714286	.097154294	.3	0
26,644	350	.15	.140154324	.6	0
25,074	375	.185714286	.159720676	.5	0
23,586	400	.221428571	.108092081	.4	0
22,171	425	.2	.181267135	.7	0
20,823	450	.2	.155840242	.5	0
19,533	475	.242857143	.154525111	.5	0
18,298	500	.207142857	.166753281	.7	0
17,112	525	.257142857	.284643576	1.1	0
15,970	550	.207142857	.15336512	.5	0
14,870	575	.192857143	.096098238	.4	.1
13,808	600	.2	.188984052	.7	0
12,781	625	.307142857	.289001753	1.1	.1
11,786	650	.385714286	.339871187	1.2	0
10,823	675	.571428571	.489068778	1.7	0
9,888	700	.478571429	.273024264	1.1	.1
8,979	725	.435714286	.225540073	.8	0
8,095	750	.378571429	.224178652	.8	0
7,235	775	.35	.188036758	.6	0
6,398	800	.292857143	.133440866	.5	0
5,581	825	.271428571	.122058369	.5	.1
4,784	850	.192857143	.122267195	.4	0
4,005	875	.228571429	.18681175	.6	0
3,245	900	.328571429	.174965234	.8	.1
2,501	925	.378571429	.189657794	.6	.1
1,774	950	.471428571	.18681175	.9	.2
1,062	975	.335714286	.343529434	1	0
364	1000	.435714286	.194963931	.7	0

Table 6.2-2: Statistical Results Grouped by Altitude for Temperature on 5/27/99

Altitude (ft)	Pressure (Mb)	Average Deviation (°K)	Standard Deviation (°K)	Max. Deviation (°K)	Min. Deviation (°K)
52,947	100	.064285714	.061029185	.2	0
48,448	125	.185714286	.091474082	.3	0
44,073	150	.107142857	.096098238	.3	0
41,074	175	.428571429	.371157311	1.4	.1
38,623	200	.385714286	.446989662	1.7	0
36,498	225	.142857143	.11780415	.4	0
34,015	250	.328571429	.240325221	.9	.1
31,975	275	.257142857	.149831275	.5	0
30,080	300	.135714286	.128770926	.4	0
28,308	325	.178571429	.101268451	.4	0
26,644	350	.15	.090633568	.3	0
25,074	375	.071428571	.088063903	.3	0
23,586	400	.078571429	.09395052	.3	0
22,171	425	.071428571	.103016741	.3	0
20,823	450	.114285714	.176706225	.6	0
19,533	475	.185714286	.188443324	.7	0
18,298	500	.185714286	.274793841	1	0
17,112	525	.242857143	.35196581	1.2	0
15,970	550	.264285714	.363728554	1.3	0
14,870	575	.257142857	.36784334	1.3	0
13,808	600	.264285714	.324276243	1.1	0
12,781	625	.257142857	.263805182	.9	0
11,786	650	.228571429	.221776055	.8	0
10,823	675	.171428571	.127776541	.5	0
9,888	700	.207142857	.127976036	.5	0
8,979	725	.235714286	.179712379	.5	0
8,095	750	.142857143	.097938864	.4	0
7,235	775	.114285714	.083300113	.3	0
6,398	800	.121428571	.131902591	.5	0
5,581	825	.092857143	.079860338	.3	0
4,784	850	.135714286	.10424757	.3	0
4,005	875	.171428571	.095832406	.3	0
3,245	900	.135714286	.097154294	.3	0
2,501	925	.135714286	.089500603	.3	0
1,774	950	.257142857	.163509045	.6	0
1,062	975	.285714286	.172616601	.6	.1
364	1000	.407142857	.278940169	1.1	.1

Tables 6.2-3 and 6.2-4 show the average deviation, standard deviation, maximum deviation and minimum deviation values calculated with the wind direction deviation values for May 26, 1999 and May 27, 1999 respectively. The results shown below are grouped by altitude. The table also shows the associated pressure in millibars and its equivalent altitude in feet associated with the deviation values.

Table 6.2-3: Statistical Results Grouped by Altitude for Wind Direction on 5/26/99

Altitude (ft)	Pressure (Mb)	Average Deviation (degrees)	Standard Deviation (degrees)	Max. Deviation (degrees)	Min. Deviation (degrees)
52,947	100	2.45732857	1.49543876	4.8497	.3666
48,448	125	1.5438	1.16031808	5.2621	.3544
44,073	150	1.8177	1.19170459	4.217	.0158
41,074	175	1.91238571	1.33905656	4.8897	.4907
38,623	200	2.54333571	1.21855683	5.1387	.904
36,498	225	1.44148571	.935361196	3.0907	.0179
34,015	250	1.48462857	1.21893261	4.398	.0897
31,975	275	1.43079286	1.48234556	5.3449	.1221
30,080	300	1.67654286	1.8504657	6.1962	.0084
28,308	325	1.49227857	1.56375929	5.3506	.0531
26,644	350	1.70122143	1.23716667	4.1598	.3008
25,074	375	1.59636429	.940180085	3.7602	.4082
23,586	400	1.32304286	1.17968823	4.8561	.0162
22,171	425	1.03872857	1.19812747	4.6069	.0488
20,823	450	1.02094286	.845857806	3.0697	.2037
19,533	475	.913621429	.604157607	1.9717	.0934
18,298	500	1.22973571	.67090422	2.5707	.1115
17,112	525	1.38197857	.944160828	3.5133	.1432
15,970	550	1.16146429	1.09365374	3.9172	.0722
14,870	575	1.60238571	1.41344191	5.4426	.162
13,808	600	1.08062857	.867393217	3.241	.0177
12,781	625	.640592857	.632957937	2.2977	.1176
11,786	650	.867007143	.456501569	1.9754	.267
10,823	675	.72295	.504057119	1.6271	0
9,888	700	.667021429	.578958533	1.7713	0
8,979	725	.717	.494987339	1.6271	.0744
8,095	750	.867628571	.539141699	1.7092	.1279
7,235	775	.785421429	.575626664	1.7225	.0342
6,398	800	.907535714	.589679705	1.9105	0
5,581	825	1.10208571	.899076413	3.1872	.1001
4,784	850	1.22160714	.942380193	3.264	.0247
4,005	875	1.21057143	1.15339877	4.6622	.0014
3,245	900	1.38694286	1.32501312	4.2296	.1277
2,501	925	1.2973	1.01078072	3.3012	.042
1,774	950	1.14240714	.820815588	2.7014	.0994
1,062	975	.949814286	.929981385	3.5323	.0868
364	1000	1.05564286	.836094829	3.3451	.0745

Table 6.2-4: Statistical Results Grouped by Altitude for Wind Direction on 5/27/99

Altitude (ft)	Pressure (Mb)	Average Deviation (degrees)	Standard Deviation (degrees)	Max. Deviation (degrees)	Min. Deviation (degrees)
52,947	100	4.76762143	3.85576053	14.3492	.4237
48,448	125	1.27321429	1.07082854	4.3219	.0166
44,073	150	1.48237143	1.05774305	3.9894	.1059
41,074	175	1.94542143	1.03088496	3.7093	0
38,623	200	1.28590714	.80211911	3.0019	.1806
36,498	225	1.47605	1.36179684	4.2506	.0414
34,015	250	1.29002857	.751877974	2.7663	.3777
31,975	275	1.35374286	1.00621839	3.065	.1399
30,080	300	1.0108	.605878259	2.1547	.004
28,308	325	.780342857	.930486658	3.7971	.0528
26,644	350	.984214286	.935658528	3.2856	.0333
25,074	375	1.07227143	.910250806	2.934	.0414
23,586	400	1.2751	.961342524	3.3413	.0619
22,171	425	1.33814286	.967074214	3.4643	.1498
20,823	450	2.12573571	1.53034772	5.3631	.4225
19,533	475	1.80576429	1.45535015	5.5151	.1275
18,298	500	1.31157143	1.1997014	4.1895	.0587
17,112	525	1.21783571	.842009097	3.2254	.0706
15,970	550	1.36315714	1.20505521	4.7529	0
14,870	575	1.45862143	1.22830839	4.4637	.2344
13,808	600	1.35998571	1.06490378	3.889	.1718
12,781	625	1.58074286	1.00573381	3.3394	.1536
11,786	650	1.84396429	1.2530129	4.1139	.1036
10,823	675	1.84565714	1.42823855	4.6382	.1053
9,888	700	1.59585	1.6325685	4.9305	.121
8,979	725	1.11898571	1.40960966	5.5994	.0919
8,095	750	1.49559286	.934213508	3.2773	.298
7,235	775	1.32901429	1.02509715	3.3862	.0278
6,398	800	2.49743571	1.73696767	6.594	.0481
5,581	825	2.19736429	2.05632459	6.7923	.1063
4,784	850	1.41687857	1.48277859	6.2777	.2924
4,005	875	1.43977857	1.03154336	3.5376	.2342
3,245	900	1.68157857	.778540469	2.9278	.4896
2,501	925	1.53490714	1.01448155	3.8141	.1942
1,774	950	1.48159286	.967023704	3.5641	.1662
1,062	975	1.56689286	.95837835	3.6388	.1225
364	1000	1.61897143	.728762832	3.1604	.4354

Tables 6.2-5 and 6.2-6 show the average deviation, standard deviation, maximum deviation and minimum deviation values calculated with the wind speed deviation values for May 26, 1999 and May 27, 1999 respectively. The results shown below are grouped by altitude. The table also shows the associated pressure in millibars and its equivalent altitude in feet associated with the deviation values.

Table 6.2-5: Statistical Results Grouped by Altitude for Wind Speed on 5/26/99

Altitude (ft)	Pressure (Mb)	Average Deviation (knots)	Standard Deviation (knots)	Max. Deviation (knots)	Min. Deviation (knots)
52,947	100	.102156448	.044587549	.177242978	.032734939
48,448	125	.070455931	.049772717	.1590677	.01181879
44,073	150	.062293023	.045443326	.189100646	.004606996
41,074	175	.052538911	.042776007	.132805882	.000116633
38,623	200	.132072761	.080642015	.330731743	.010244248
36,498	225	.121048185	.084791217	.330673427	.019030585
34,015	250	.149821774	.11101347	.316424786	.011430014
31,975	275	.250791067	.15418795	.575291286	.048033275
30,080	300	.211771841	.159703934	.547785384	.035592443
28,308	325	.125819021	.082258164	.26631156	.007211795
26,644	350	.10115535	.068590471	.247164342	.005889956
25,074	375	.125044246	.124363348	.40432704	.014598539
23,586	400	.150886743	.102900591	.363136223	.002118829
22,171	425	.135452335	.102565949	.376762822	.01393762
20,823	450	.143313941	.120540762	.404074336	.019477678
19,533	475	.111313511	.078878729	.356041061	.029216516
18,298	500	.128893129	.09689409	.310340442	.004801384
17,112	525	.155172998	.124889257	.398612033	.032132336
15,970	550	.130950865	.092099982	.405901583	.043076381
14,870	575	.123655761	.082355221	.332520113	.006706386
13,808	600	.093503405	.064697048	.231729935	.005442864
12,781	625	.079985108	.046256863	.165424188	.010127615
11,786	650	.077355316	.044024069	.167931793	.006706386
10,823	675	.06456042	.045447869	.148784575	0
9,888	700	.05758328	.044680832	.14157278	0
8,979	725	.071297353	.051176562	.186009877	.017767063
8,095	750	.079042326	.048680923	.190908455	.008494756
7,235	775	.084600435	.07080851	.257875121	.00810598
6,398	800	.072283178	.063624992	.222127168	0
5,581	825	.079807382	.060838821	.202299592	.008067102
4,784	850	.106167783	.074703536	.249496998	.009447257
4,005	875	.125110894	.083530609	.269110747	.000427654
3,245	900	.120415035	.101266275	.31797989	.000233266
2,501	925	.134740042	.103916478	.365352246	.007425622
1,774	950	.118432277	.098703016	.296636088	.000777552
1,062	975	.098221479	.080976881	.269460646	.00437373
364	1000	.075954334	.051117886	.161789132	.004393169

Table 6.2-6: Statistical Results Grouped by Altitude for Wind Speed on 5/27/99

Altitude (ft)	Pressure (Mb)	Average Deviation (knots)	Standard Deviation (knots)	Max. Deviation (knots)	Min. Deviation (knots)
52,947	100	.102156448	.044587549	.177242978	.032734939
48,448	125	.070455931	.049772717	.1590677	.01181879
44,073	150	.062293023	.045443326	.189100646	.004606996
41,074	175	.052538911	.042776007	.132805882	.000116633
38,623	200	.132072761	.080642015	.330731743	.010244248
36,498	225	.121048185	.084791217	.330673427	.019030585
34,015	250	.149821774	.11101347	.316424786	.011430014
31,975	275	.250791067	.15418795	.575291286	.048033275
30,080	300	.211771841	.159703934	.547785384	.035592443
28,308	325	.125819021	.082258164	.26631156	.007211795
26,644	350	.10115535	.068590471	.247164342	.005889956
25,074	375	.125044246	.124363348	.40432704	.014598539
23,586	400	.150886743	.102900591	.363136223	.002118829
22,171	425	.135452335	.102565949	.376762822	.01393762
20,823	450	.143313941	.120540762	.404074336	.019477678
19,533	475	.111313511	.078878729	.356041061	.029216516
18,298	500	.128893129	.09689409	.310340442	.004801384
17,112	525	.155172998	.124889257	.398612033	.032132336
15,970	550	.130950865	.092099982	.405901583	.043076381
14,870	575	.123655761	.082355221	.332520113	.006706386
13,808	600	.093503405	.064697048	.231729935	.005442864
12,781	625	.079985108	.046256863	.165424188	.010127615
11,786	650	.077355316	.044024069	.167931793	.006706386
10,823	675	.06456042	.045447869	.148784575	0
9,888	700	.05758328	.044680832	.14157278	0
8,979	725	.071297353	.051176562	.186009877	.017767063
8,095	750	.079042326	.048680923	.190908455	.008494756
7,235	775	.084600435	.07080851	.257875121	.00810598
6,398	800	.072283178	.063624992	.222127168	0
5,581	825	.079807382	.060838821	.202299592	.008067102
4,784	850	.106167783	.074703536	.249496998	.009447257
4,005	875	.125110894	.083530609	.269110747	.000427654
3,245	900	.120415035	.101266275	.31797989	.000233266
2,501	925	.134740042	.103916478	.365352246	.007425622
1,774	950	.118432277	.098703016	.296636088	.000777552
1,062	975	.098221479	.080976881	.269460646	.00437373
364	1000	.075954334	.051117886	.161789132	.004393169

6.3 Statistical Results grouped by Hour

This section presents the statistical results produced from querying the partitioned weather database to calculate the average deviation, standard deviation, maximum deviation and minimum deviation for each of the three types of deviation data (i.e. temperature, wind speed and wind direction). The results are grouped by day and then by comparison hour.

Table 6.3-1 shows the average deviation, standard deviation, maximum deviation and minimum deviation values calculated with the temperature deviation values for May 26, 1999. The results from the query are grouped by the comparison hour. Table 6.3-2 shows the same statistics calculated for May 27, 1999.

Table 6.3-1: Statistical Results for Temperature Grouped by Hour for 5/26/99

Comparison Hour on 5/26/99	Average Deviation (°K)	Standard Deviation (°K)	Max. Deviation (°K)	Min. Deviation (°K)
10:00 AM – 11:00 AM	.291891892	.232935565	1	0
11:00 AM – 12:00 PM	.364864865	.275305467	1.3	0
12:00 PM – 1:00 PM	.22972973	.164177273	.6	0
1:00 PM – 2:00 PM	.216216216	.185288636	.7	0
2:00 PM – 3:00 PM	.510810811	.334328926	1.7	0
3:00 PM – 4:00 PM	.262162162	.235213641	1	0
4:00 PM – 5:00 PM	.248648649	.244532014	1.1	0
5:00 PM – 6:00 PM	.302702703	.205974358	.8	0
6:00 PM – 7:00 PM	.210810811	.237992216	.9	0
7:00 PM – 8:00 PM	.243243243	.293664361	1.2	0
8:00 PM – 9:00 PM	.286486486	.223198896	.8	0
9:00 PM – 10:00 PM	.243243243	.158610314	.5	0
10:00 PM – 11:00 PM	.2	.167655338	.7	0
11:00 PM – 12:00 AM	.27027027	.188687277	.7	0

Table 6.3-2: Statistical Results for Temperature Grouped by Hour for 5/27/99

Comparison Hour on 5/27/99	Average Deviation (°K)	Standard Deviation (°K)	Max. Deviation (°K)	Min. Deviation (°K)
9:00 AM – 10:00 AM	.186486486	.125552561	.5	0
10:00 AM – 11:00 AM	.210810811	.159024261	.7	0
11:00 AM – 12:00 PM	.47027027	.434254503	1.7	0
12:00 PM – 1:00 PM	.12972973	.111173181	.4	0
1:00 PM – 2:00 PM	.124324324	.126075094	.6	0
2:00 PM – 3:00 PM	.143243243	.206045274	1	0
3:00 PM – 4:00 PM	.210810811	.135135626	.8	0
4:00 PM – 5:00 PM	No data	No data	No data	No data
5:00 PM – 6:00 PM	No data	No data	No data	No data
6:00 PM – 7:00 PM	.154054054	.119898128	.6	0
7:00 PM – 8:00 PM	.140540541	.173142439	.8	0
8:00 PM – 9:00 PM	.135135135	.154598937	.6	0
9:00 PM – 10:00 PM	.097297297	.115047968	.5	0
10:00 PM – 11:00 PM	.105405405	.098491532	.4	0
11:00 PM – 12:00 AM	.408108108	.336419864	1.4	0
12:00 AM – 1:00 AM	.208108108	.14955552	.6	0

Table 6.3-3 shows the average deviation, standard deviation, maximum deviation and minimum deviation values calculated with the wind direction deviation values for May 26, 1999. The results from the query are grouped by the comparison hour. Table 6.3-4 shows the same statistics calculated for May 27, 1999.

Table 6.3-3: Statistical Results for Wind Direction Grouped by Hour for 5/26/99

Comparison Hour on 5/27/99	Average Deviation (degrees)	Standard Deviation (degrees)	Max Deviation (degrees)	Min. Deviation (degrees)
10:00 AM – 11:00 AM	1.14496486	1.00425176	4.1704	.0179
11:00 AM – 12:00 PM	1.58517027	1.22348053	3.9172	.08
12:00 PM – 1:00 PM	.84397027	.581614547	2.47	0
1:00 PM – 2:00 PM	1.4387027	1.17968992	5.4426	.1236
2:00 PM – 3:00 PM	1.72367027	1.27109999	4.8897	.1115
3:00 PM – 4:00 PM	1.41318649	1.01176362	4.8392	.0084
4:00 PM – 5:00 PM	1.23241351	.750299358	2.6647	.0162
5:00 PM – 6:00 PM	.904332432	.920990208	4.217	.0014
6:00 PM – 7:00 PM	1.76196216	1.6560214	5.5008	.0478
7:00 PM – 8:00 PM	1.04052162	.887874618	4.8497	.0366
8:00 PM – 9:00 PM	1.42761622	1.56805375	6.1962	.0247
9:00 PM – 10:00 PM	1.13596216	.736330994	3.7493	.0722
10:00 PM – 11:00 PM	1.43970811	1.21697798	4.6622	.0342
11:00 PM – 12:00 AM	.839897297	.763392311	3.1751	0

Table 6.3-4: Statistical Results for Wind Direction Grouped by Hour for 5/27/99

Comparison Hour on 5/27/99	Average Deviation (degrees)	Standard Deviation (degrees)	Max Deviation (degrees)	Min. Deviation (degrees)
9:00 AM – 10:00 AM	1.3385	.95709464	3.5641	.1275
10:00 AM – 11:00 AM	1.12736216	1.25276119	5.8501	.0278
11:00 AM – 12:00 PM	1.55104865	1.41380095	7.7024	.0333
12:00 PM – 1:00 PM	1.2856	1.06895293	4.7946	.0587
1:00 PM – 2:00 PM	1.77246486	1.61873434	5.5151	.004
2:00 PM – 3:00 PM	1.77263784	1.82595377	11.1323	.0883
3:00 PM – 4:00 PM	1.6944973	2.29410914	14.3492	.1053
4:00 PM – 5:00 PM	No data	No data	No data	No data
5:00 PM – 6:00 PM	No data	No data	No data	No data
6:00 PM – 7:00 PM	1.60560541	1.1843233	4.6433	.0166
7:00 PM – 8:00 PM	1.38076486	1.01618451	4.5989	0
8:00 PM – 9:00 PM	1.90164865	1.07821675	3.9624	.0481
9:00 PM – 10:00 PM	1.49809459	1.42013433	5.3631	.0414
10:00 PM – 11:00 PM	1.96125946	1.29017666	5.5994	.0528
11:00 PM – 12:00 AM	1.50858108	1.70975077	6.7923	0
12:00 AM – 1:00 AM	1.6323	1.34640562	4.6268	.0414

Table 6.3-5 shows the average deviation, standard deviation, maximum deviation and minimum deviation values calculated with the wind speed deviation values for May 26, 1999. The results from the query are grouped by the comparison hour. Table 6.3-6 shows the same statistics calculated for May 27, 1999.

Table 6.3-5: Statistical Results for Wind Speed Grouped by Hour for 5/26/99

Comparison Hour on 5/26/99	Average Deviation (knots)	Standard Deviation (knots)	Max Deviation (knots)	Min. Deviation (knots)
10:00 AM – 11:00 AM	.080104143	.060723049	.269110747	.005365109
11:00 AM – 12:00 PM	.160248213	.109955037	.405901583	.000116633
12:00 PM – 1:00 PM	.131629572	.069825269	.311001361	0
1:00 PM – 2:00 PM	.111383273	.070628696	.316249837	.000602603
2:00 PM – 3:00 PM	.130656055	.083504845	.316424786	.007211795
3:00 PM – 4:00 PM	.100110345	.082399726	.330731743	.004801384
4:00 PM – 5:00 PM	.14488263	.112059028	.404074336	.00209939
5:00 PM – 6:00 PM	.063340016	.04959883	.177242978	.000233266
6:00 PM – 7:00 PM	.135656555	.099356498	.433601873	.004606996
7:00 PM – 8:00 PM	.104393711	.099194507	.376762822	.000427654
8:00 PM – 9:00 PM	.093126037	.086159759	.429383653	.005442864
9:00 PM – 10:00 PM	.101236745	.091190237	.356041061	.004723628
10:00 PM – 11:00 PM	.102372076	.111497389	.575291286	.000777552
11:00 PM – 12:00 AM	.101167396	.126907355	.547785384	0

Table 6.3-6: Statistical Results for Wind Speed Grouped by Hour for 5/27/99

Comparison Hour on 5/27/99	Average Deviation (knots)	Standard Deviation (knots)	Max Deviation (knots)	Min. Deviation (knots)
9:00 AM – 10:00 AM	.102270679	.086035128	.415135013	.002876942
10:00 AM – 11:00 AM	.080860154	.086014712	.347079774	.000174949
11:00 AM – 12:00 PM	.133027589	.093906872	.36253362	.000447092
12:00 PM – 1:00 PM	.116584466	.120404891	.410061486	.005928834
1:00 PM – 2:00 PM	.093804819	.076918279	.343891811	.000952501
2:00 PM – 3:00 PM	.142680792	.09903648	.52791893	.005365109
3:00 PM – 4:00 PM	.127792247	.136225793	.57717685	.002507605
4:00 PM – 5:00 PM	No data	No data	No data	No data
5:00 PM – 6:00 PM	No data	No data	No data	No data
6:00 PM – 7:00 PM	.193575773	.216318631	.920193914	.005442864
7:00 PM – 8:00 PM	.103753807	.092893495	.397951114	0
8:00 PM – 9:00 PM	.185629507	.134560586	.462565685	.013782109
9:00 PM – 10:00 PM	.122229073	.146138114	.691360361	.00501521
10:00 PM – 11:00 PM	.196069194	.139523697	.720732388	.019380484
11:00 PM – 12:00 AM	.175634812	.145983792	.501929255	0
12:00 AM – 1:00 AM	.172234072	.115920212	.477280856	.00307133

6.4 Statistical Results grouped by Altitude and Hour

Statistical results consisting of the average deviation, standard deviation, maximum deviation and minimum deviation were calculated for the temperature, wind direction, and wind speed deviations. This information returned from the SQL queries was grouped by altitude and then by hour, the results are shown in detail in Appendix B, Tables B-1 through B-6.

7 Conclusions

Back in January 2000 in Section 3.7.1 of reference 5, ACT-250 first defined the goal of this weather study. It reports the range of deviations in the weather forecasts using the RUC-236 data to determine if the weather forecasts met URET CCLD Design Workload Requirements [5]. . The study results are then compared to the Design Workload Requirements, which required at most 50% of the center area's forecast winds to vary 29 degrees in wind direction, 19 knots in wind speed, and 4 degrees Centigrade in temperature [1].

This study calculated several point statistics on the range of deviations between sequentially reporting points in the weather forecasts, such as sample average, standard deviation, maximum, and minimum. Another point statistic reported that can be compared directly to the requirement is the sample median. The sample median is the 50th quantile of the sample distribution. In other words, it is the value where exactly 50 percent of the sample population falls below or above. As stated previously, the Design Workload Requirements defined the weather data requirements in terms of a median [1]. In Section 6.1 of this document Figures 6.1-3 and 4, Figures 6.1-7 and 8, and Figures 6.1-11 and 12 presented the cumulative sample distributions of the temperature, wind direction, and wind speed deviations, respectively. From these figures, medians were determined for both days of weather data. The resulting median values are summarized in the following Table 7-1 where they are compared to the required values.

Table 7-1: Weather Deviation Median Values Versus Requirements

Weather Component	Required [1][5]	Results from 50 th Quantile (Sample Median)	
		May 26 th , 1999	May 27 th , 1999
Temperature Deviation	4 degrees Centigrade	0.22	0.14
Wind Speed	19 knots	0.08	0.09
Wind Direction	29 degrees	1.0	1.25

The results presented in Table 7-1 illustrate that the deviations between the one hour weather forecasts for the two days examined was well within the required values defined in the Design Workload Requirements documented in the URET CCLD Software Specification Document (SSD) [1]. Therefore, the collected weather data is a valid source of input data for use as weather forecasts in the Accuracy Acceptance Testing of URET CCLD.

Acronyms

ACT	-	FAA Designator for the William J. Hughes Technical Center
AOS	-	FAA Designator for Operational Support
ARTCC	-	Air Route Traffic Control Center
ASCII	-	American Standard Code for Information Interchange
AST	-	Advanced System Technologies, Inc.
CONUS	-	Continental United States
CTA	-	Computer Technology Associates, Inc.
CTAS	-	Central TRACON Automation System
CWSUs	-	Central Weather Service Units
FAA	-	Federal Aviation Administration
FSL	-	Forecast Systems Laboratory
GRIB	-	Gridded Binary
hh	-	hours (2 digit representation)
ITWS	-	Integrated Terminal Weather System
LMATM	-	Lockheed Martin Corporation Air Traffic Management Division
mb	-	millibars representing atmospheric pressure
NOAA	-	National Oceanic and Atmospheric Administration
nm	-	nautical mile(s)
NWS	-	National Weather Service
PDF	-	Postscript Data Format
rrr	-	record number (up to 3 digit representation)
RUC	-	Rapid Update Cycle
RUC-2	-	Generic Rapid Update Cycle version 2 data
RUC-236	-	Rapid Update Cycle version 236 data
URET	-	User Request Evaluation Tool
URET CCLD	-	User Request Evaluation Tool Core Capability Limited Deployment
URET DU	-	User Request Evaluation Tool Daily Use
u-wind	-	east-west wind component
v-wind	-	north-south wind component
WARP	-	Weather and Radar Processor
WJHTC	-	William J. Hughes Technical Center
WMO	-	Weather Meteorological Organization
WP5	-	WordPerfect 5 format
WP6	-	WordPerfect 6 format
ZID	-	Indianapolis ARTCC
ZME	-	Memphis ARTCC

References

1. Federal Aviation Administration (October 1998), *User Request Evaluation Tool Core Capability Limited Deployment System Specification Document*, FAA-ER-2929.
2. Lockheed Martin Air Traffic Management (August 1998), *User Request Evaluation Tool (URET) Core Capability Limited Deployment (CCLD) System/Segment Specification (SSS) Volume 1, Part2: Conflict Probe (CP)*, FAA-AP-1998-1089, CDRL IA093, Rockville, Maryland.
3. Anderson, John D. Jr., (1989), *Introduction to Flight, Third Edition*, Boston, MASS: McGraw Hill.
4. Glover, Thomas J., (June 1999), *Pocket Reference*, Second Edition, Littleton, Colorado: Sequoia Publishing, Incorporated.
5. Paglione, M., Oaks, R., Ryan, Dr. H., Summerill, J. S., (Final, January 2000), *Description of Accuracy Scenarios for the Acceptance Testing of the User Request Evaluation Tool (URET) / Core Capability Limited Deployment (CCLD)*, FAA William J. Hughes Technical Center / ACT-250, Atlantic City, New Jersey.

APPENDIX A: WEATHER PROCESSING SUPPORT INFORMATION

Appendix A- 1: Processing Steps.

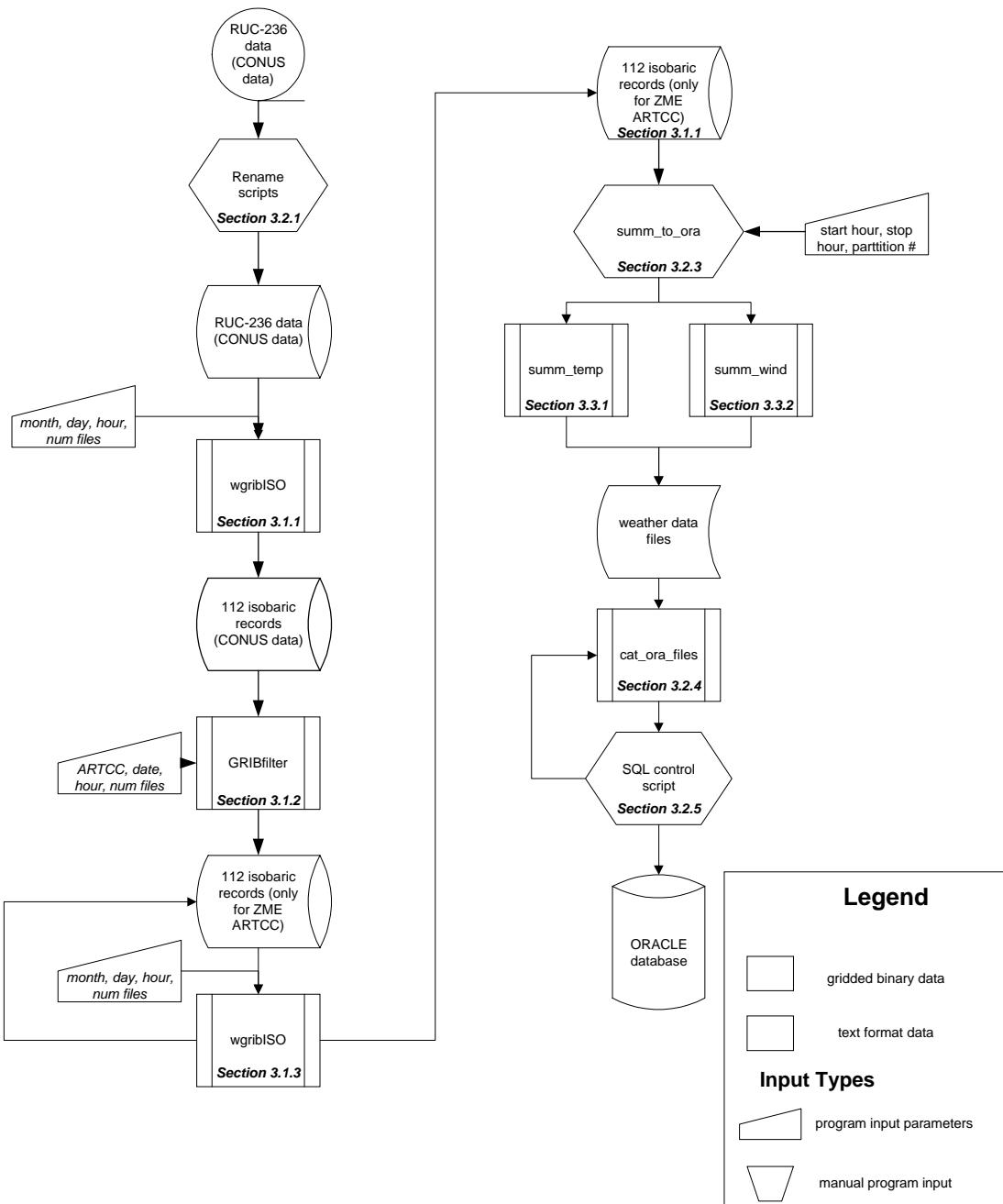
This list below provides the logical progression of steps followed during this weather study, the document does not list the steps in their chronological order as they occurred. References will refer the user to the specific section number for more information about the subject.

Chronological Progression to Perform the Weather Study

1. Obtain the RUC-236 data; load this data to the TFM LAN for processing.
2. Utilize the rename script (Section 3.2.1) to get files in proper file naming format.
3. Run wgribISO (Section 3.1.1) to extract the 112 isobaric records of interest from the RUC-236 data.
4. Run GRIBfilter (Section 3.1.2) to further extract only the 112 isobaric records from within the ZME airspace. Coordinates defining this ARTCC were input into GRIBfilter and the resulting isobaric records were extracted.
5. Run the txt_records script (Section 3.2.2); this in turn calls wgribISO a second time (Section 3.1.3) to extract the isobaric records for ZME and to write them in separate files in a text format.
6. Run the sum_to_ora (Section 3.2.3) script to create the data files. This script called the summ_temp.c program (section 3.3.1) and the summ_wind.c program (Section 3.3.2) to calculate the deviations in the temperature and wind values. Results were written to flat files and were named according to their record number and forecast hour.
7. Run the cat_ora_files (Section 3.2.4) script to combine the individual deviation records by hour into a single file before it was loaded into the Oracle database. Deviations for all three types of data were inserted into the database by hour.
8. Next, call the SQL control script (Section 3.2.5) to actually load the database using the newly created data file.
9. Issue the queries on the database to gather the data; send the Oracle generated results to flat files.
10. Transfer the flat files to a PC and load them in Excel to create the Excel charts for wind speed, wind direction and temperature deviation charts.

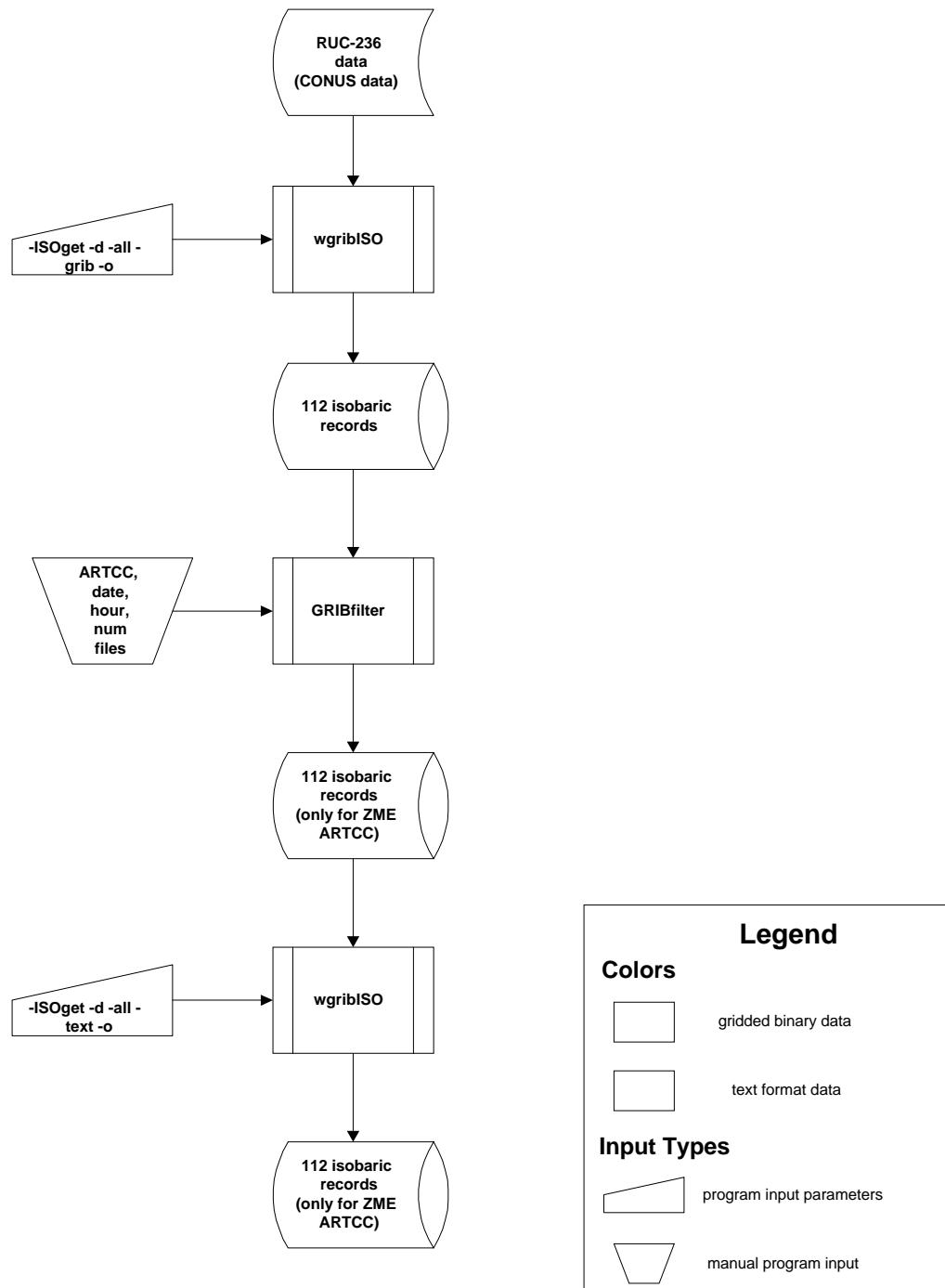
Appendix A-2: Flowchart of Processing Steps Utilized During the Weather Study

This flowchart shows the general progression of how the RUC-236 data was converted for this weather analysis. References are made to the sections within this document describing the data conversion executed.



Appendix A- 3 General Data Flow Diagram of RUC-236 Data through the wgribISO and GRIBfilter programs

This flowchart shows the general progression of how the RUC-236 data was converted for this weather analysis using the wgribISO and GRIBfilter programs. References are made to the sections within this document describing the data conversion executed.



Appendix A- 4: Filename Conversion Used in the Weather Study

This table shows the progression of the filename conversion from the original input data received on tape to the output generated by the GRIBfilter program. The first column shows the original filename, the following columns note the name of the program and beneath is an example of the filename conversion produced at the end of the program.

<i>Input filename</i>	<i>Rename Script (Section 3.2.1)</i>	<i>WgribISO (Section 3.1.1)</i>	<i>GRIBfilter (Section 3.1.2)</i>	<i>WgribISO (with Text conversion) (Section 3.1.3)</i>
Ruc2.T09Z.pgrb01	26T09Z.01Z	26T09Ziso.01Z	RZME09Z01Z	TRZME09Zr1.txt
Ruc2.T09Z.pgrb02	26T09Z.02Z	26T09Ziso.02Z	RZME09Z02Z	TRZME09Zr2.txt
Ruc2.T09Z.pgrb03	26T09Z.03Z	26T09Ziso.03Z	RZME09Z03Z	TRZME09Zr3.txt
Ruc2.T09Z.pgrb06	26T09Z.06Z	26T09Ziso.06Z	RZME09Z06Z	TRZME09Zr4.txt
Ruc2.T09Z.pgrb09	26T09Z.09Z	26T09Ziso.09Z	RZME09Z09Z	TRZME09Zr5.txt
Ruc2.T09Z.pgrb12	26T09Z.12Z	26T09Ziso.12Z	RZME09Z12Z	TRZME09Zr6.txt
Ruc2.T09Z.pgrbanl	26T09Z.anl	26T09Ziso.anl	RZME09Zanl	TRZME09Zr7.txt

The first column represents the seven types of data files as extracted from tape. The second column shows the format of the seven filenames after running the rename script. The third column shows the filename conversion after running wgribISO in batch mode. Column four shows the filename conversion after running through the GRIBfilter program, here all the filename are preceded with the prefix RZME. Only the files ending in 01Z from GRIBfilter were used in the data study as these relate to the next sequential forecast hour in comparison to the current forecast. All other forecast hours 02, 03, 06, 09, 12 and anl were not used. The last column shows the conversion of the 01Z forecast file output from GRIBfilter and then processed by wgribISO using the text conversion feature where the 112 individual records are extracted to separate files. The 0900 hour had 112 records with the format of TZME09Zrrr.txt where the rrr represented one of the 112 isobaric records extracted in text format.

APPENDIX B: STATISTICAL RESULTS

Table B-1: Statistical Results for Temperature Grouped by Altitude and Hour for 5/26/99

The table shown below displays the statistical results for temperature deviations grouped first by altitude then by hour for May 26, 1999 for the time span of 10:00 AM until 12:00 AM.

Comparison Hour on 5/26/99	Altitude (ft)	Pressure (Mb)	Average Deviation (°K)	Standard Deviation (°K)	Max. Deviation (°K)	Min. Deviation (°K)
10:00 AM – 11:00 AM	52,947	100	.2	0	.2	.2
10:00 AM – 11:00 AM	48,448	125	.1	0	.1	.1
10:00 AM – 11:00 AM	44,073	150	.3	0	.3	.3
10:00 AM – 11:00 AM	41,074	175	.1	0	.1	.1
10:00 AM – 11:00 AM	38,623	200	0	0	0	0
10:00 AM – 11:00 AM	36,498	225	.2	0	.2	.2
10:00 AM – 11:00 AM	34,015	250	.8	0	.8	.8
10:00 AM – 11:00 AM	31,975	275	.5	0	.5	.5
10:00 AM – 11:00 AM	30,080	300	.1	0	.1	.1
10:00 AM – 11:00 AM	28,308	325	.1	0	.1	.1
10:00 AM – 11:00 AM	26,644	350	.2	0	.2	.2
10:00 AM – 11:00 AM	25,074	375	.1	0	.1	.1
10:00 AM – 11:00 AM	23,586	400	.1	0	.1	.1
10:00 AM – 11:00 AM	22,171	425	0	0	0	0
10:00 AM – 11:00 AM	20,823	450	.1	0	.1	.1
10:00 AM – 11:00 AM	19,533	475	.2	0	.2	.2
10:00 AM – 11:00 AM	18,298	500	.2	0	.2	.2
10:00 AM – 11:00 AM	17,112	525	.1	0	.1	.1
10:00 AM – 11:00 AM	15,970	550	.2	0	.2	.2
10:00 AM – 11:00 AM	14,870	575	.3	0	.3	.3
10:00 AM – 11:00 AM	13,808	600	0	0	0	0
10:00 AM – 11:00 AM	12,781	625	.1	0	.1	.1
10:00 AM – 11:00 AM	11,786	650	.6	0	.6	.6
10:00 AM – 11:00 AM	10,823	675	1	0	1	1
10:00 AM – 11:00 AM	9,888	700	.5	0	.5	.5
10:00 AM – 11:00 AM	8,979	725	.5	0	.5	.5
10:00 AM – 11:00 AM	8,095	750	.5	0	.5	.5
10:00 AM – 11:00 AM	7,235	775	.5	0	.5	.5
10:00 AM – 11:00 AM	6,398	800	.3	0	.3	.3
10:00 AM – 11:00 AM	5,581	825	.1	0	.1	.1
10:00 AM – 11:00 AM	4,784	850	.1	0	.1	.1
10:00 AM – 11:00 AM	4,005	875	.3	0	.3	.3
10:00 AM – 11:00 AM	3,245	900	.3	0	.3	.3
10:00 AM – 11:00 AM	2,501	925	.5	0	.5	.5
10:00 AM – 11:00 AM	1,774	950	.5	0	.5	.5
10:00 AM – 11:00 AM	1,062	975	.6	0	.6	.6
10:00 AM – 11:00 AM	364	1000	.5	0	.5	.5
11:00 AM – 12:00 PM	52,947	100	.2	0	.2	.2
11:00 AM – 12:00 PM	48,448	125	.1	0	.1	.1
11:00 AM – 12:00 PM	44,073	150	.4	0	.4	.4
11:00 AM – 12:00 PM	41,074	175	0	0	0	0
11:00 AM – 12:00 PM	38,623	200	.2	0	.2	.2
11:00 AM – 12:00 PM	36,498	225	.2	0	.2	.2
11:00 AM – 12:00 PM	34,015	250	0	0	0	0

11:00 AM – 12:00 PM	31,975	275	.1	0	.1	.1
11:00 AM – 12:00 PM	30,080	300	0	0	0	0
11:00 AM – 12:00 PM	28,308	325	.1	0	.1	.1
11:00 AM – 12:00 PM	26,644	350	.2	0	.2	.2
11:00 AM – 12:00 PM	25,074	375	.4	0	.4	.4
11:00 AM – 12:00 PM	23,586	400	.3	0	.3	.3
11:00 AM – 12:00 PM	22,171	425	.7	0	.7	.7
11:00 AM – 12:00 PM	20,823	450	.4	0	.4	.4
11:00 AM – 12:00 PM	19,533	475	.4	0	.4	.4
11:00 AM – 12:00 PM	18,298	500	.3	0	.3	.3
11:00 AM – 12:00 PM	17,112	525	.2	0	.2	.2
11:00 AM – 12:00 PM	15,970	550	.2	0	.2	.2
11:00 AM – 12:00 PM	14,870	575	.3	0	.3	.3
11:00 AM – 12:00 PM	13,808	600	.4	0	.4	.4
11:00 AM – 12:00 PM	12,781	625	.6	0	.6	.6
11:00 AM – 12:00 PM	11,786	650	1	0	1	1
11:00 AM – 12:00 PM	10,823	675	1.3	0	1.3	1.3
11:00 AM – 12:00 PM	9,888	700	.5	0	.5	.5
11:00 AM – 12:00 PM	8,979	725	.4	0	.4	.4
11:00 AM – 12:00 PM	8,095	750	.3	0	.3	.3
11:00 AM – 12:00 PM	7,235	775	.3	0	.3	.3
11:00 AM – 12:00 PM	6,398	800	.3	0	.3	.3
11:00 AM – 12:00 PM	5,581	825	.3	0	.3	.3
11:00 AM – 12:00 PM	4,784	850	.1	0	.1	.1
11:00 AM – 12:00 PM	4,005	875	.4	0	.4	.4
11:00 AM – 12:00 PM	3,245	900	.5	0	.5	.5
11:00 AM – 12:00 PM	2,501	925	.5	0	.5	.5
11:00 AM – 12:00 PM	1,774	950	.4	0	.4	.4
11:00 AM – 12:00 PM	1,062	975	1	0	1	1
11:00 AM – 12:00 PM	364	1000	.5	0	.5	.5
12:00 PM – 1:00 PM	52,947	100	.2	0	.2	.2
12:00 PM – 1:00 PM	48,448	125	0	0	0	0
12:00 PM – 1:00 PM	44,073	150	.5	0	.5	.5
12:00 PM – 1:00 PM	41,074	175	0	0	0	0
12:00 PM – 1:00 PM	38,623	200	.4	0	.4	.4
12:00 PM – 1:00 PM	36,498	225	.6	0	.6	.6
12:00 PM – 1:00 PM	34,015	250	.4	0	.4	.4
12:00 PM – 1:00 PM	31,975	275	.1	0	.1	.1
12:00 PM – 1:00 PM	30,080	300	.2	0	.2	.2
12:00 PM – 1:00 PM	28,308	325	.1	0	.1	.1
12:00 PM – 1:00 PM	26,644	350	.2	0	.2	.2
12:00 PM – 1:00 PM	25,074	375	.2	0	.2	.2
12:00 PM – 1:00 PM	23,586	400	.3	0	.3	.3
12:00 PM – 1:00 PM	22,171	425	.1	0	.1	.1
12:00 PM – 1:00 PM	20,823	450	.3	0	.3	.3
12:00 PM – 1:00 PM	19,533	475	.3	0	.3	.3
12:00 PM – 1:00 PM	18,298	500	.2	0	.2	.2
12:00 PM – 1:00 PM	17,112	525	.1	0	.1	.1
12:00 PM – 1:00 PM	15,970	550	.2	0	.2	.2
12:00 PM – 1:00 PM	14,870	575	.1	0	.1	.1
12:00 PM – 1:00 PM	13,808	600	.1	0	.1	.1
12:00 PM – 1:00 PM	12,781	625	.4	0	.4	.4
12:00 PM – 1:00 PM	11,786	650	.5	0	.5	.5

12:00 PM – 1:00 PM	10,823	675	.4	0	.4	.4
12:00 PM – 1:00 PM	9,888	700	.1	0	.1	.1
12:00 PM – 1:00 PM	8,979	725	.1	0	.1	.1
12:00 PM – 1:00 PM	8,095	750	0	0	0	0
12:00 PM – 1:00 PM	7,235	775	0	0	0	0
12:00 PM – 1:00 PM	6,398	800	0	0	0	0
12:00 PM – 1:00 PM	5,581	825	.2	0	.2	.2
12:00 PM – 1:00 PM	4,784	850	.3	0	.3	.3
12:00 PM – 1:00 PM	4,005	875	.5	0	.5	.5
12:00 PM – 1:00 PM	3,245	900	.2	0	.2	.2
12:00 PM – 1:00 PM	2,501	925	.1	0	.1	.1
12:00 PM – 1:00 PM	1,774	950	.3	0	.3	.3
12:00 PM – 1:00 PM	1,062	975	.3	0	.3	.3
12:00 PM – 1:00 PM	364	1000	.5	0	.5	.5
1:00 PM – 2:00 PM	52,947	100	.1	0	.1	.1
1:00 PM – 2:00 PM	48,448	125	0	0	0	0
1:00 PM – 2:00 PM	44,073	150	.2	0	.2	.2
1:00 PM – 2:00 PM	41,074	175	.1	0	.1	.1
1:00 PM – 2:00 PM	38,623	200	.1	0	.1	.1
1:00 PM – 2:00 PM	36,498	225	.5	0	.5	.5
1:00 PM – 2:00 PM	34,015	250	0	0	0	0
1:00 PM – 2:00 PM	31,975	275	.2	0	.2	.2
1:00 PM – 2:00 PM	30,080	300	.2	0	.2	.2
1:00 PM – 2:00 PM	28,308	325	0	0	0	0
1:00 PM – 2:00 PM	26,644	350	.1	0	.1	.1
1:00 PM – 2:00 PM	25,074	375	.1	0	.1	.1
1:00 PM – 2:00 PM	23,586	400	.1	0	.1	.1
1:00 PM – 2:00 PM	22,171	425	.1	0	.1	.1
1:00 PM – 2:00 PM	20,823	450	0	0	0	0
1:00 PM – 2:00 PM	19,533	475	.1	0	.1	.1
1:00 PM – 2:00 PM	18,298	500	0	0	0	0
1:00 PM – 2:00 PM	17,112	525	0	0	0	0
1:00 PM – 2:00 PM	15,970	550	0	0	0	0
1:00 PM – 2:00 PM	14,870	575	.2	0	.2	.2
1:00 PM – 2:00 PM	13,808	600	.4	0	.4	.4
1:00 PM – 2:00 PM	12,781	625	.7	0	.7	.7
1:00 PM – 2:00 PM	11,786	650	.3	0	.3	.3
1:00 PM – 2:00 PM	10,823	675	.6	0	.6	.6
1:00 PM – 2:00 PM	9,888	700	.3	0	.3	.3
1:00 PM – 2:00 PM	8,979	725	.4	0	.4	.4
1:00 PM – 2:00 PM	8,095	750	.4	0	.4	.4
1:00 PM – 2:00 PM	7,235	775	.4	0	.4	.4
1:00 PM – 2:00 PM	6,398	800	.3	0	.3	.3
1:00 PM – 2:00 PM	5,581	825	.2	0	.2	.2
1:00 PM – 2:00 PM	4,784	850	.1	0	.1	.1
1:00 PM – 2:00 PM	4,005	875	.6	0	.6	.6
1:00 PM – 2:00 PM	3,245	900	.2	0	.2	.2
1:00 PM – 2:00 PM	2,501	925	.3	0	.3	.3
1:00 PM – 2:00 PM	1,774	950	.2	0	.2	.2
1:00 PM – 2:00 PM	1,062	975	.1	0	.1	.1
1:00 PM – 2:00 PM	364	1000	.4	0	.4	.4
2:00 PM – 3:00 PM	52,947	100	.1	0	.1	.1
2:00 PM – 3:00 PM	48,448	125	.3	0	.3	.3

2:00 PM – 3:00 PM	44,073	150	.5	0	.5	.5
2:00 PM – 3:00 PM	41,074	175	.1	0	.1	.1
2:00 PM – 3:00 PM	38,623	200	0	0	0	0
2:00 PM – 3:00 PM	36,498	225	.4	0	.4	.4
2:00 PM – 3:00 PM	34,015	250	.6	0	.6	.6
2:00 PM – 3:00 PM	31,975	275	.6	0	.6	.6
2:00 PM – 3:00 PM	30,080	300	.7	0	.7	.7
2:00 PM – 3:00 PM	28,308	325	.3	0	.3	.3
2:00 PM – 3:00 PM	26,644	350	.6	0	.6	.6
2:00 PM – 3:00 PM	25,074	375	.5	0	.5	.5
2:00 PM – 3:00 PM	23,586	400	.3	0	.3	.3
2:00 PM – 3:00 PM	22,171	425	.4	0	.4	.4
2:00 PM – 3:00 PM	20,823	450	.2	0	.2	.2
2:00 PM – 3:00 PM	19,533	475	.3	0	.3	.3
2:00 PM – 3:00 PM	18,298	500	.2	0	.2	.2
2:00 PM – 3:00 PM	17,112	525	.3	0	.3	.3
2:00 PM – 3:00 PM	15,970	550	.2	0	.2	.2
2:00 PM – 3:00 PM	14,870	575	.4	0	.4	.4
2:00 PM – 3:00 PM	13,808	600	.7	0	.7	.7
2:00 PM – 3:00 PM	12,781	625	1.1	0	1.1	1.1
2:00 PM – 3:00 PM	11,786	650	1.2	0	1.2	1.2
2:00 PM – 3:00 PM	10,823	675	1.7	0	1.7	1.7
2:00 PM – 3:00 PM	9,888	700	1.1	0	1.1	1.1
2:00 PM – 3:00 PM	8,979	725	.7	0	.7	.7
2:00 PM – 3:00 PM	8,095	750	.7	0	.7	.7
2:00 PM – 3:00 PM	7,235	775	.6	0	.6	.6
2:00 PM – 3:00 PM	6,398	800	.5	0	.5	.5
2:00 PM – 3:00 PM	5,581	825	.5	0	.5	.5
2:00 PM – 3:00 PM	4,784	850	.3	0	.3	.3
2:00 PM – 3:00 PM	4,005	875	.3	0	.3	.3
2:00 PM – 3:00 PM	3,245	900	.5	0	.5	.5
2:00 PM – 3:00 PM	2,501	925	.6	0	.6	.6
2:00 PM – 3:00 PM	1,774	950	.5	0	.5	.5
2:00 PM – 3:00 PM	1,062	975	.2	0	.2	.2
2:00 PM – 3:00 PM	364	1000	.7	0	.7	.7
3:00 PM – 4:00 PM	52,947	100	.1	0	.1	.1
3:00 PM – 4:00 PM	48,448	125	0	0	0	0
3:00 PM – 4:00 PM	44,073	150	.3	0	.3	.3
3:00 PM – 4:00 PM	41,074	175	.1	0	.1	.1
3:00 PM – 4:00 PM	38,623	200	.1	0	.1	.1
3:00 PM – 4:00 PM	36,498	225	.1	0	.1	.1
3:00 PM – 4:00 PM	34,015	250	0	0	0	0
3:00 PM – 4:00 PM	31,975	275	.3	0	.3	.3
3:00 PM – 4:00 PM	30,080	300	.3	0	.3	.3
3:00 PM – 4:00 PM	28,308	325	.3	0	.3	.3
3:00 PM – 4:00 PM	26,644	350	.1	0	.1	.1
3:00 PM – 4:00 PM	25,074	375	.5	0	.5	.5
3:00 PM – 4:00 PM	23,586	400	.3	0	.3	.3
3:00 PM – 4:00 PM	22,171	425	.1	0	.1	.1
3:00 PM – 4:00 PM	20,823	450	.1	0	.1	.1
3:00 PM – 4:00 PM	19,533	475	0	0	0	0
3:00 PM – 4:00 PM	18,298	500	0	0	0	0
3:00 PM – 4:00 PM	17,112	525	.3	0	.3	.3

3:00 PM – 4:00 PM	15,970	550	.5	0	.5	.5
3:00 PM – 4:00 PM	14,870	575	.2	0	.2	.2
3:00 PM – 4:00 PM	13,808	600	.1	0	.1	.1
3:00 PM – 4:00 PM	12,781	625	.2	0	.2	.2
3:00 PM – 4:00 PM	11,786	650	.5	0	.5	.5
3:00 PM – 4:00 PM	10,823	675	1	0	1	1
3:00 PM – 4:00 PM	9,888	700	1	0	1	1
3:00 PM – 4:00 PM	8,979	725	.5	0	.5	.5
3:00 PM – 4:00 PM	8,095	750	.3	0	.3	.3
3:00 PM – 4:00 PM	7,235	775	.4	0	.4	.4
3:00 PM – 4:00 PM	6,398	800	.4	0	.4	.4
3:00 PM – 4:00 PM	5,581	825	.3	0	.3	.3
3:00 PM – 4:00 PM	4,784	850	.2	0	.2	.2
3:00 PM – 4:00 PM	4,005	875	.1	0	.1	.1
3:00 PM – 4:00 PM	3,245	900	.2	0	.2	.2
3:00 PM – 4:00 PM	2,501	925	.1	0	.1	.1
3:00 PM – 4:00 PM	1,774	950	.2	0	.2	.2
3:00 PM – 4:00 PM	1,062	975	0	0	0	0
3:00 PM – 4:00 PM	364	1000	.5	0	.5	.5
4:00 PM- 5:00 PM	52,947	100	.1	0	.1	.1
4:00 PM- 5:00 PM	48,448	125	.6	0	.6	.6
4:00 PM- 5:00 PM	44,073	150	0	0	0	0
4:00 PM- 5:00 PM	41,074	175	0	0	0	0
4:00 PM- 5:00 PM	38,623	200	.3	0	.3	.3
4:00 PM- 5:00 PM	36,498	225	.4	0	.4	.4
4:00 PM- 5:00 PM	34,015	250	.2	0	.2	.2
4:00 PM- 5:00 PM	31,975	275	.1	0	.1	.1
4:00 PM- 5:00 PM	30,080	300	0	0	0	0
4:00 PM- 5:00 PM	28,308	325	.3	0	.3	.3
4:00 PM- 5:00 PM	26,644	350	.2	0	.2	.2
4:00 PM- 5:00 PM	25,074	375	.1	0	.1	.1
4:00 PM- 5:00 PM	23,586	400	.2	0	.2	.2
4:00 PM- 5:00 PM	22,171	425	0	0	0	0
4:00 PM- 5:00 PM	20,823	450	.2	0	.2	.2
4:00 PM- 5:00 PM	19,533	475	.4	0	.4	.4
4:00 PM- 5:00 PM	18,298	500	.7	0	.7	.7
4:00 PM- 5:00 PM	17,112	525	1.1	0	1.1	1.1
4:00 PM- 5:00 PM	15,970	550	.4	0	.4	.4
4:00 PM- 5:00 PM	14,870	575	.3	0	.3	.3
4:00 PM- 5:00 PM	13,808	600	.3	0	.3	.3
4:00 PM- 5:00 PM	12,781	625	.1	0	.1	.1
4:00 PM- 5:00 PM	11,786	650	0	0	0	0
4:00 PM- 5:00 PM	10,823	675	.6	0	.6	.6
4:00 PM- 5:00 PM	9,888	700	.5	0	.5	.5
4:00 PM- 5:00 PM	8,979	725	0	0	0	0
4:00 PM- 5:00 PM	8,095	750	0	0	0	0
4:00 PM- 5:00 PM	7,235	775	0	0	0	0
4:00 PM- 5:00 PM	6,398	800	.1	0	.1	.1
4:00 PM- 5:00 PM	5,581	825	.1	0	.1	.1
4:00 PM- 5:00 PM	4,784	850	.1	0	.1	.1
4:00 PM- 5:00 PM	4,005	875	0	0	0	0
4:00 PM- 5:00 PM	3,245	900	.3	0	.3	.3
4:00 PM- 5:00 PM	2,501	925	.5	0	.5	.5

4:00 PM- 5:00 PM	1,774	950	.5	0	.5	.5
4:00 PM- 5:00 PM	1,062	975	.1	0	.1	.1
4:00 PM- 5:00 PM	364	1000	.4	0	.4	.4
5:00 PM – 6:00 PM	52,947	100	.1	0	.1	.1
5:00 PM – 6:00 PM	48,448	125	.2	0	.2	.2
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5:00 PM – 6:00 PM	31,975	275	.1	0	.1	.1
5:00 PM – 6:00 PM	30,080	300	.1	0	.1	.1
5:00 PM – 6:00 PM	28,308	325	.1	0	.1	.1
5:00 PM – 6:00 PM	26,644	350	0	0	0	0
5:00 PM – 6:00 PM	25,074	375	.1	0	.1	.1
5:00 PM – 6:00 PM	23,586	400	.3	0	.3	.3
5:00 PM – 6:00 PM	22,171	425	.3	0	.3	.3
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5:00 PM – 6:00 PM	4,784	850	.3	0	.3	.3
5:00 PM – 6:00 PM	4,005	875	.4	0	.4	.4
5:00 PM – 6:00 PM	3,245	900	.8	0	.8	.8
5:00 PM – 6:00 PM	2,501	925	.5	0	.5	.5
5:00 PM – 6:00 PM	1,774	950	.7	0	.7	.7
5:00 PM – 6:00 PM	1,062	975	.8	0	.8	.8
5:00 PM – 6:00 PM	364	1000	.7	0	.7	.7
6:00 PM – 7:00 PM	52,947	100	0	0	0	0
6:00 PM – 7:00 PM	48,448	125	0	0	0	0
6:00 PM – 7:00 PM	44,073	150	0	0	0	0
6:00 PM – 7:00 PM	41,074	175	.1	0	.1	.1
6:00 PM – 7:00 PM	38,623	200	.7	0	.7	.7
6:00 PM – 7:00 PM	36,498	225	.2	0	.2	.2
6:00 PM – 7:00 PM	34,015	250	0	0	0	0
6:00 PM – 7:00 PM	31,975	275	0	0	0	0
6:00 PM – 7:00 PM	30,080	300	.1	0	.1	.1
6:00 PM – 7:00 PM	28,308	325	.1	0	.1	.1
6:00 PM – 7:00 PM	26,644	350	.1	0	.1	.1
6:00 PM – 7:00 PM	25,074	375	0	0	0	0
6:00 PM – 7:00 PM	23,586	400	.2	0	.2	.2

6:00 PM – 7:00 PM	22,171	425	.1	0	.1	.1
6:00 PM – 7:00 PM	20,823	450	.1	0	.1	.1
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6:00 PM – 7:00 PM	18,298	500	.1	0	.1	.1
6:00 PM – 7:00 PM	17,112	525	.2	0	.2	.2
6:00 PM – 7:00 PM	15,970	550	.1	0	.1	.1
6:00 PM – 7:00 PM	14,870	575	.1	0	.1	.1
6:00 PM – 7:00 PM	13,808	600	.1	0	.1	.1
6:00 PM – 7:00 PM	12,781	625	.1	0	.1	.1
6:00 PM – 7:00 PM	11,786	650	.1	0	.1	.1
6:00 PM – 7:00 PM	10,823	675	0	0	0	0
6:00 PM – 7:00 PM	9,888	700	.4	0	.4	.4
6:00 PM – 7:00 PM	8,979	725	.5	0	.5	.5
6:00 PM – 7:00 PM	8,095	750	.2	0	.2	.2
6:00 PM – 7:00 PM	7,235	775	.1	0	.1	.1
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6:00 PM – 7:00 PM	1,062	975	.9	0	.9	.9
6:00 PM – 7:00 PM	364	1000	.6	0	.6	.6
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7:00 PM – 8: 00 PM	48,448	125	.3	0	.3	.3
7:00 PM – 8: 00 PM	44,073	150	0	0	0	0
7:00 PM – 8: 00 PM	41,074	175	0	0	0	0
7:00 PM – 8: 00 PM	38,623	200	.9	0	.9	.9
7:00 PM – 8: 00 PM	36,498	225	1.2	0	1.2	1.2
7:00 PM – 8: 00 PM	34,015	250	1.1	0	1.1	1.1
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7:00 PM – 8: 00 PM	30,080	300	0	0	0	0
7:00 PM – 8: 00 PM	28,308	325	.1	0	.1	.1
7:00 PM – 8: 00 PM	26,644	350	.1	0	.1	.1
7:00 PM – 8: 00 PM	25,074	375	0	0	0	0
7:00 PM – 8: 00 PM	23,586	400	.1	0	.1	.1
7:00 PM – 8: 00 PM	22,171	425	.1	0	.1	.1
7:00 PM – 8: 00 PM	20,823	450	0	0	0	0
7:00 PM – 8: 00 PM	19,533	475	0	0	0	0
7:00 PM – 8: 00 PM	18,298	500	.1	0	.1	.1
7:00 PM – 8: 00 PM	17,112	525	0	0	0	0
7:00 PM – 8: 00 PM	15,970	550	0	0	0	0
7:00 PM – 8: 00 PM	14,870	575	.1	0	.1	.1
7:00 PM – 8: 00 PM	13,808	600	.2	0	.2	.2
7:00 PM – 8: 00 PM	12,781	625	.2	0	.2	.2
7:00 PM – 8: 00 PM	11,786	650	.2	0	.2	.2
7:00 PM – 8: 00 PM	10,823	675	.3	0	.3	.3
7:00 PM – 8: 00 PM	9,888	700	.3	0	.3	.3
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7:00 PM – 8: 00 PM	1,774	950	.4	0	.4	.4
7:00 PM – 8: 00 PM	1,062	975	0	0	0	0
7:00 PM – 8: 00 PM	364	1000	.3	0	.3	.3
8:00 PM – 9:00 PM	52,947	100	0	0	0	0
8:00 PM – 9:00 PM	48,448	125	.4	0	.4	.4
8:00 PM – 9:00 PM	44,073	150	.6	0	.6	.6
8:00 PM – 9:00 PM	41,074	175	0	0	0	0
8:00 PM – 9:00 PM	38,623	200	.3	0	.3	.3
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8:00 PM – 9:00 PM	20,823	450	0	0	0	0
8:00 PM – 9:00 PM	19,533	475	.1	0	.1	.1
8:00 PM – 9:00 PM	18,298	500	.1	0	.1	.1
8:00 PM – 9:00 PM	17,112	525	.1	0	.1	.1
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8:00 PM – 9:00 PM	11,786	650	.4	0	.4	.4
8:00 PM – 9:00 PM	10,823	675	.5	0	.5	.5
8:00 PM – 9:00 PM	9,888	700	.6	0	.6	.6
8:00 PM – 9:00 PM	8,979	725	.8	0	.8	.8
8:00 PM – 9:00 PM	8,095	750	.8	0	.8	.8
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8:00 PM – 9:00 PM	4,784	850	.3	0	.3	.3
8:00 PM – 9:00 PM	4,005	875	.1	0	.1	.1
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8:00 PM – 9:00 PM	1,774	950	.5	0	.5	.5
8:00 PM – 9:00 PM	1,062	975	.5	0	.5	.5
8:00 PM – 9:00 PM	364	1000	.6	0	.6	.6
9:00 PM – 10:00 PM	52,947	100	.1	0	.1	.1
9:00 PM – 10:00 PM	48,448	125	.2	0	.2	.2
9:00 PM – 10:00 PM	44,073	150	.5	0	.5	.5
9:00 PM – 10:00 PM	41,074	175	.1	0	.1	.1
9:00 PM – 10:00 PM	38,623	200	0	0	0	0
9:00 PM – 10:00 PM	36,498	225	.3	0	.3	.3
9:00 PM – 10:00 PM	34,015	250	.5	0	.5	.5
9:00 PM – 10:00 PM	31,975	275	.2	0	.2	.2

9:00 PM – 10:00 PM	30,080	300	.1	0	.1	.1
9:00 PM – 10:00 PM	28,308	325	.1	0	.1	.1
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9:00 PM – 10:00 PM	19,533	475	.3	0	.3	.3
9:00 PM – 10:00 PM	18,298	500	.2	0	.2	.2
9:00 PM – 10:00 PM	17,112	525	0	0	0	0
9:00 PM – 10:00 PM	15,970	550	.1	0	.1	.1
9:00 PM – 10:00 PM	14,870	575	.1	0	.1	.1
9:00 PM – 10:00 PM	13,808	600	0	0	0	0
9:00 PM – 10:00 PM	12,781	625	.1	0	.1	.1
9:00 PM – 10:00 PM	11,786	650	.2	0	.2	.2
9:00 PM – 10:00 PM	10,823	675	.2	0	.2	.2
9:00 PM – 10:00 PM	9,888	700	.3	0	.3	.3
9:00 PM – 10:00 PM	8,979	725	.5	0	.5	.5
9:00 PM – 10:00 PM	8,095	750	.5	0	.5	.5
9:00 PM – 10:00 PM	7,235	775	.5	0	.5	.5
9:00 PM – 10:00 PM	6,398	800	.5	0	.5	.5
9:00 PM – 10:00 PM	5,581	825	.4	0	.4	.4
9:00 PM – 10:00 PM	4,784	850	.3	0	.3	.3
9:00 PM – 10:00 PM	4,005	875	.2	0	.2	.2
9:00 PM – 10:00 PM	3,245	900	.4	0	.4	.4
9:00 PM – 10:00 PM	2,501	925	.4	0	.4	.4
9:00 PM – 10:00 PM	1,774	950	.4	0	.4	.4
9:00 PM – 10:00 PM	1,062	975	0	0	0	0
9:00 PM – 10:00 PM	364	1000	.2	0	.2	.2
10:00 PM – 11:00 PM	52,947	100	.1	0	.1	.1
10:00 PM – 11:00 PM	48,448	125	.3	0	.3	.3
10:00 PM – 11:00 PM	44,073	150	0	0	0	0
10:00 PM – 11:00 PM	41,074	175	.2	0	.2	.2
10:00 PM – 11:00 PM	38,623	200	.2	0	.2	.2
10:00 PM – 11:00 PM	36,498	225	.4	0	.4	.4
10:00 PM – 11:00 PM	34,015	250	.1	0	.1	.1
10:00 PM – 11:00 PM	31,975	275	.2	0	.2	.2
10:00 PM – 11:00 PM	30,080	300	0	0	0	0
10:00 PM – 11:00 PM	28,308	325	0	0	0	0
10:00 PM – 11:00 PM	26,644	350	.1	0	.1	.1
10:00 PM – 11:00 PM	25,074	375	.1	0	.1	.1
10:00 PM – 11:00 PM	23,586	400	.4	0	.4	.4
10:00 PM – 11:00 PM	22,171	425	.3	0	.3	.3
10:00 PM – 11:00 PM	20,823	450	.4	0	.4	.4
10:00 PM – 11:00 PM	19,533	475	.4	0	.4	.4
10:00 PM – 11:00 PM	18,298	500	.2	0	.2	.2
10:00 PM – 11:00 PM	17,112	525	.2	0	.2	.2
10:00 PM – 11:00 PM	15,970	550	.2	0	.2	.2
10:00 PM – 11:00 PM	14,870	575	.1	0	.1	.1
10:00 PM – 11:00 PM	13,808	600	0	0	0	0
10:00 PM – 11:00 PM	12,781	625	.1	0	.1	.1
10:00 PM – 11:00 PM	11,786	650	.1	0	.1	.1
10:00 PM – 11:00 PM	10,823	675	0	0	0	0

10:00 PM – 11:00 PM	9,888	700	.2	0	.2	.2
10:00 PM – 11:00 PM	8,979	725	.1	0	.1	.1
10:00 PM – 11:00 PM	8,095	750	.3	0	.3	.3
10:00 PM – 11:00 PM	7,235	775	.4	0	.4	.4
10:00 PM – 11:00 PM	6,398	800	.3	0	.3	.3
10:00 PM – 11:00 PM	5,581	825	.4	0	.4	.4
10:00 PM – 11:00 PM	4,784	850	0	0	0	0
10:00 PM – 11:00 PM	4,005	875	0	0	0	0
10:00 PM – 11:00 PM	3,245	900	.3	0	.3	.3
10:00 PM – 11:00 PM	2,501	925	.5	0	.5	.5
10:00 PM – 11:00 PM	1,774	950	.7	0	.7	.7
10:00 PM – 11:00 PM	1,062	975	.1	0	.1	.1
10:00 PM – 11:00 PM	364	1000	0	0	0	0
11:00 PM – 12:00 AM	52,947	100	.1	0	.1	.1
11:00 PM – 12:00 AM	48,448	125	0	0	0	0
11:00 PM – 12:00 AM	44,073	150	.2	0	.2	.2
11:00 PM – 12:00 AM	41,074	175	.3	0	.3	.3
11:00 PM – 12:00 AM	38,623	200	.7	0	.7	.7
11:00 PM – 12:00 AM	36,498	225	.1	0	.1	.1
11:00 PM – 12:00 AM	34,015	250	.2	0	.2	.2
11:00 PM – 12:00 AM	31,975	275	.5	0	.5	.5
11:00 PM – 12:00 AM	30,080	300	.5	0	.5	.5
11:00 PM – 12:00 AM	28,308	325	.2	0	.2	.2
11:00 PM – 12:00 AM	26,644	350	0	0	0	0
11:00 PM – 12:00 AM	25,074	375	.1	0	.1	.1
11:00 PM – 12:00 AM	23,586	400	0	0	0	0
11:00 PM – 12:00 AM	22,171	425	.2	0	.2	.2
11:00 PM – 12:00 AM	20,823	450	.5	0	.5	.5
11:00 PM – 12:00 AM	19,533	475	.5	0	.5	.5
11:00 PM – 12:00 AM	18,298	500	.3	0	.3	.3
11:00 PM – 12:00 AM	17,112	525	.4	0	.4	.4
11:00 PM – 12:00 AM	15,970	550	.5	0	.5	.5
11:00 PM – 12:00 AM	14,870	575	.2	0	.2	.2
11:00 PM – 12:00 AM	13,808	600	.1	0	.1	.1
11:00 PM – 12:00 AM	12,781	625	.2	0	.2	.2
11:00 PM – 12:00 AM	11,786	650	.2	0	.2	.2
11:00 PM – 12:00 AM	10,823	675	.2	0	.2	.2
11:00 PM – 12:00 AM	9,888	700	.3	0	.3	.3
11:00 PM – 12:00 AM	8,979	725	.5	0	.5	.5
11:00 PM – 12:00 AM	8,095	750	.6	0	.6	.6
11:00 PM – 12:00 AM	7,235	775	.4	0	.4	.4
11:00 PM – 12:00 AM	6,398	800	.3	0	.3	.3
11:00 PM – 12:00 AM	5,581	825	.1	0	.1	.1
11:00 PM – 12:00 AM	4,784	850	0	0	0	0
11:00 PM – 12:00 AM	4,005	875	0	0	0	0
11:00 PM – 12:00 AM	3,245	900	.4	0	.4	.4
11:00 PM – 12:00 AM	2,501	925	.5	0	.5	.5
11:00 PM – 12:00 AM	1,774	950	.4	0	.4	.4
11:00 PM – 12:00 AM	1,062	975	.1	0	.1	.1
11:00 PM – 12:00 AM	364	1000	.2	0	.2	.2

Table B-2: Statistical Results for Temperature Grouped by Altitude and Hour for 5/27/99

The table shown below displays the statistical results for temperature deviations grouped first by altitude then by hour for May 27, 1999 for the time span of 9:00 AM until 1:00 AM.

Comparison Hour on 5/27/99	Altitude (ft)	Presssure (Mb)	Average Deviation (°K)	Standard Deviation (°K)	Max. Deviation (°K)	Min. Deviation (°K)
9:00 AM – 10:00 AM	52,947	100	.1	0	.1	.1
9:00 AM – 10:00 AM	48,448	125	.2	0	.2	.2
9:00 AM – 10:00 AM	44,073	150	0	0	0	0
9:00 AM – 10:00 AM	41,074	175	.2	0	.2	.2
9:00 AM – 10:00 AM	38,623	200	.1	0	.1	.1
9:00 AM – 10:00 AM	36,498	225	0	0	0	0
9:00 AM – 10:00 AM	34,015	250	.3	0	.3	.3
9:00 AM – 10:00 AM	31,975	275	.1	0	.1	.1
9:00 AM – 10:00 AM	30,080	300	.4	0	.4	.4
9:00 AM – 10:00 AM	28,308	325	.1	0	.1	.1
9:00 AM – 10:00 AM	26,644	350	.2	0	.2	.2
9:00 AM – 10:00 AM	25,074	375	0	0	0	0
9:00 AM – 10:00 AM	23,586	400	.1	0	.1	.1
9:00 AM – 10:00 AM	22,171	425	.1	0	.1	.1
9:00 AM – 10:00 AM	20,823	450	.1	0	.1	.1
9:00 AM – 10:00 AM	19,533	475	.2	0	.2	.2
9:00 AM – 10:00 AM	18,298	500	.2	0	.2	.2
9:00 AM – 10:00 AM	17,112	525	.2	0	.2	.2
9:00 AM – 10:00 AM	15,970	550	.1	0	.1	.1
9:00 AM – 10:00 AM	14,870	575	.2	0	.2	.2
9:00 AM – 10:00 AM	13,808	600	.2	0	.2	.2
9:00 AM – 10:00 AM	12,781	625	.3	0	.3	.3
9:00 AM – 10:00 AM	11,786	650	.3	0	.3	.3
9:00 AM – 10:00 AM	10,823	675	.1	0	.1	.1
9:00 AM – 10:00 AM	9,888	700	.3	0	.3	.3
9:00 AM – 10:00 AM	8,979	725	.4	0	.4	.4
9:00 AM – 10:00 AM	8,095	750	.1	0	.1	.1
9:00 AM – 10:00 AM	7,235	775	.1	0	.1	.1
9:00 AM – 10:00 AM	6,398	800	.1	0	.1	.1
9:00 AM – 10:00 AM	5,581	825	.1	0	.1	.1
9:00 AM – 10:00 AM	4,784	850	.3	0	.3	.3
9:00 AM – 10:00 AM	4,005	875	.2	0	.2	.2
9:00 AM – 10:00 AM	3,245	900	.2	0	.2	.2
9:00 AM – 10:00 AM	2,501	925	0	0	0	0
9:00 AM – 10:00 AM	1,774	950	.5	0	.5	.5
9:00 AM – 10:00 AM	1,062	975	.4	0	.4	.4
9:00 AM – 10:00 AM	364	1000	.4	0	.4	.4
10:00 AM – 11:00 AM	52,947	100	.1	0	.1	.1
10:00 AM – 11:00 AM	48,448	125	.2	0	.2	.2
10:00 AM – 11:00 AM	44,073	150	.1	0	.1	.1
10:00 AM – 11:00 AM	41,074	175	.2	0	.2	.2
10:00 AM – 11:00 AM	38,623	200	.4	0	.4	.4
10:00 AM – 11:00 AM	36,498	225	0	0	0	0

10:00 AM – 11:00 AM	34,015	250	.3	0	.3	.3
10:00 AM – 11:00 AM	31,975	275	0	0	0	0
10:00 AM – 11:00 AM	30,080	300	0	0	0	0
10:00 AM – 11:00 AM	28,308	325	.2	0	.2	.2
10:00 AM – 11:00 AM	26,644	350	.1	0	.1	.1
10:00 AM – 11:00 AM	25,074	375	.1	0	.1	.1
10:00 AM – 11:00 AM	23,586	400	.1	0	.1	.1
10:00 AM – 11:00 AM	22,171	425	.1	0	.1	.1
10:00 AM – 11:00 AM	20,823	450	.2	0	.2	.2
10:00 AM – 11:00 AM	19,533	475	.2	0	.2	.2
10:00 AM – 11:00 AM	18,298	500	.1	0	.1	.1
10:00 AM – 11:00 AM	17,112	525	.2	0	.2	.2
10:00 AM – 11:00 AM	15,970	550	.2	0	.2	.2
10:00 AM – 11:00 AM	14,870	575	.1	0	.1	.1
10:00 AM – 11:00 AM	13,808	600	.2	0	.2	.2
10:00 AM – 11:00 AM	12,781	625	.2	0	.2	.2
10:00 AM – 11:00 AM	11,786	650	.1	0	.1	.1
10:00 AM – 11:00 AM	10,823	675	.2	0	.2	.2
10:00 AM – 11:00 AM	9,888	700	.3	0	.3	.3
10:00 AM – 11:00 AM	8,979	725	.4	0	.4	.4
10:00 AM – 11:00 AM	8,095	750	.1	0	.1	.1
10:00 AM – 11:00 AM	7,235	775	.1	0	.1	.1
10:00 AM – 11:00 AM	6,398	800	.1	0	.1	.1
10:00 AM – 11:00 AM	5,581	825	.2	0	.2	.2
10:00 AM – 11:00 AM	4,784	850	.3	0	.3	.3
10:00 AM – 11:00 AM	4,005	875	.3	0	.3	.3
10:00 AM – 11:00 AM	3,245	900	.3	0	.3	.3
10:00 AM – 11:00 AM	2,501	925	.2	0	.2	.2
10:00 AM – 11:00 AM	1,774	950	.6	0	.6	.6
10:00 AM – 11:00 AM	1,062	975	.6	0	.6	.6
10:00 AM – 11:00 AM	364	1000	.7	0	.7	.7
11:00 AM – 12:00 PM	52,947	100	.1	0	.1	.1
11:00 AM – 12:00 PM	48,448	125	.3	0	.3	.3
11:00 AM – 12:00 PM	44,073	150	.3	0	.3	.3
11:00 AM – 12:00 PM	41,074	175	.4	0	.4	.4
11:00 AM – 12:00 PM	38,623	200	1.7	0	1.7	1.7
11:00 AM – 12:00 PM	36,498	225	.2	0	.2	.2
11:00 AM – 12:00 PM	34,015	250	.7	0	.7	.7
11:00 AM – 12:00 PM	31,975	275	.3	0	.3	.3
11:00 AM – 12:00 PM	30,080	300	.2	0	.2	.2
11:00 AM – 12:00 PM	28,308	325	.3	0	.3	.3
11:00 AM – 12:00 PM	26,644	350	.3	0	.3	.3
11:00 AM – 12:00 PM	25,074	375	.3	0	.3	.3
11:00 AM – 12:00 PM	23,586	400	.3	0	.3	.3
11:00 AM – 12:00 PM	22,171	425	.3	0	.3	.3
11:00 AM – 12:00 PM	20,823	450	.6	0	.6	.6
11:00 AM – 12:00 PM	19,533	475	.7	0	.7	.7
11:00 AM – 12:00 PM	18,298	500	1	0	1	1
11:00 AM – 12:00 PM	17,112	525	1.2	0	1.2	1.2
11:00 AM – 12:00 PM	15,970	550	1.3	0	1.3	1.3
11:00 AM – 12:00 PM	14,870	575	1.3	0	1.3	1.3
11:00 AM – 12:00 PM	13,808	600	1.1	0	1.1	1.1
11:00 AM – 12:00 PM	12,781	625	.8	0	.8	.8

11:00 AM – 12:00 PM	11,786	650	.6	0	.6	.6
11:00 AM – 12:00 PM	10,823	675	.4	0	.4	.4
11:00 AM – 12:00 PM	9,888	700	0	0	0	0
11:00 AM – 12:00 PM	8,979	725	.3	0	.3	.3
11:00 AM – 12:00 PM	8,095	750	.1	0	.1	.1
11:00 AM – 12:00 PM	7,235	775	0	0	0	0
11:00 AM – 12:00 PM	6,398	800	.1	0	.1	.1
11:00 AM – 12:00 PM	5,581	825	0	0	0	0
11:00 AM – 12:00 PM	4,784	850	.1	0	.1	.1
11:00 AM – 12:00 PM	4,005	875	0	0	0	0
11:00 AM – 12:00 PM	3,245	900	.2	0	.2	.2
11:00 AM – 12:00 PM	2,501	925	.2	0	.2	.2
11:00 AM – 12:00 PM	1,774	950	0	0	0	0
11:00 AM – 12:00 PM	1,062	975	.6	0	.6	.6
11:00 AM – 12:00 PM	364	1000	1.1	0	1.1	1.1
12:00 PM – 1:00 PM	52,947	100	.1	0	.1	.1
12:00 PM – 1:00 PM	48,448	125	.3	0	.3	.3
12:00 PM – 1:00 PM	44,073	150	.2	0	.2	.2
12:00 PM – 1:00 PM	41,074	175	.3	0	.3	.3
12:00 PM – 1:00 PM	38,623	200	.3	0	.3	.3
12:00 PM – 1:00 PM	36,498	225	.2	0	.2	.2
12:00 PM – 1:00 PM	34,015	250	.1	0	.1	.1
12:00 PM – 1:00 PM	31,975	275	.4	0	.4	.4
12:00 PM – 1:00 PM	30,080	300	.3	0	.3	.3
12:00 PM – 1:00 PM	28,308	325	.1	0	.1	.1
12:00 PM – 1:00 PM	26,644	350	.2	0	.2	.2
12:00 PM – 1:00 PM	25,074	375	0	0	0	0
12:00 PM – 1:00 PM	23,586	400	0	0	0	0
12:00 PM – 1:00 PM	22,171	425	.1	0	.1	.1
12:00 PM – 1:00 PM	20,823	450	0	0	0	0
12:00 PM – 1:00 PM	19,533	475	.1	0	.1	.1
12:00 PM – 1:00 PM	18,298	500	0	0	0	0
12:00 PM – 1:00 PM	17,112	525	0	0	0	0
12:00 PM – 1:00 PM	15,970	550	0	0	0	0
12:00 PM – 1:00 PM	14,870	575	.1	0	.1	.1
12:00 PM – 1:00 PM	13,808	600	.1	0	.1	.1
12:00 PM – 1:00 PM	12,781	625	0	0	0	0
12:00 PM – 1:00 PM	11,786	650	0	0	0	0
12:00 PM – 1:00 PM	10,823	675	.2	0	.2	.2
12:00 PM – 1:00 PM	9,888	700	.3	0	.3	.3
12:00 PM – 1:00 PM	8,979	725	.3	0	.3	.3
12:00 PM – 1:00 PM	8,095	750	.1	0	.1	.1
12:00 PM – 1:00 PM	7,235	775	.1	0	.1	.1
12:00 PM – 1:00 PM	6,398	800	.1	0	.1	.1
12:00 PM – 1:00 PM	5,581	825	.1	0	.1	.1
12:00 PM – 1:00 PM	4,784	850	.1	0	.1	.1
12:00 PM – 1:00 PM	4,005	875	.2	0	.2	.2
12:00 PM – 1:00 PM	3,245	900	0	0	0	0
12:00 PM – 1:00 PM	2,501	925	0	0	0	0
12:00 PM – 1:00 PM	1,774	950	.1	0	.1	.1
12:00 PM – 1:00 PM	1,062	975	.2	0	.2	.2
12:00 PM – 1:00 PM	364	1000	.1	0	.1	.1
1:00 PM – 2:00 PM	52,947	100	.2	0	.2	.2

1:00 PM – 2:00 PM	48,448	125	0	0	0	0
1:00 PM – 2:00 PM	44,073	150	.2	0	.2	.2
1:00 PM – 2:00 PM	41,074	175	.6	0	.6	.6
1:00 PM – 2:00 PM	38,623	200	.1	0	.1	.1
1:00 PM – 2:00 PM	36,498	225	.2	0	.2	.2
1:00 PM – 2:00 PM	34,015	250	.4	0	.4	.4
1:00 PM – 2:00 PM	31,975	275	.3	0	.3	.3
1:00 PM – 2:00 PM	30,080	300	.1	0	.1	.1
1:00 PM – 2:00 PM	28,308	325	.1	0	.1	.1
1:00 PM – 2:00 PM	26,644	350	0	0	0	0
1:00 PM – 2:00 PM	25,074	375	.1	0	.1	.1
1:00 PM – 2:00 PM	23,586	400	0	0	0	0
1:00 PM – 2:00 PM	22,171	425	0	0	0	0
1:00 PM – 2:00 PM	20,823	450	0	0	0	0
1:00 PM – 2:00 PM	19,533	475	.1	0	.1	.1
1:00 PM – 2:00 PM	18,298	500	0	0	0	0
1:00 PM – 2:00 PM	17,112	525	0	0	0	0
1:00 PM – 2:00 PM	15,970	550	.1	0	.1	.1
1:00 PM – 2:00 PM	14,870	575	0	0	0	0
1:00 PM – 2:00 PM	13,808	600	.1	0	.1	.1
1:00 PM – 2:00 PM	12,781	625	.2	0	.2	.2
1:00 PM – 2:00 PM	11,786	650	.1	0	.1	.1
1:00 PM – 2:00 PM	10,823	675	.2	0	.2	.2
1:00 PM – 2:00 PM	9,888	700	.2	0	.2	.2
1:00 PM – 2:00 PM	8,979	725	.1	0	.1	.1
1:00 PM – 2:00 PM	8,095	750	.1	0	.1	.1
1:00 PM – 2:00 PM	7,235	775	.1	0	.1	.1
1:00 PM – 2:00 PM	6,398	800	0	0	0	0
1:00 PM – 2:00 PM	5,581	825	.1	0	.1	.1
1:00 PM – 2:00 PM	4,784	850	.1	0	.1	.1
1:00 PM – 2:00 PM	4,005	875	0	0	0	0
1:00 PM – 2:00 PM	3,245	900	.1	0	.1	.1
1:00 PM – 2:00 PM	2,501	925	0	0	0	0
1:00 PM – 2:00 PM	1,774	950	.3	0	.3	.3
1:00 PM – 2:00 PM	1,062	975	.2	0	.2	.2
1:00 PM – 2:00 PM	364	1000	.2	0	.2	.2
2:00 PM – 3:00 PM	52,947	100	0	0	0	0
2:00 PM – 3:00 PM	48,448	125	.1	0	.1	.1
2:00 PM – 3:00 PM	44,073	150	.1	0	.1	.1
2:00 PM – 3:00 PM	41,074	175	1	0	1	1
2:00 PM – 3:00 PM	38,623	200	.9	0	.9	.9
2:00 PM – 3:00 PM	36,498	225	.2	0	.2	.2
2:00 PM – 3:00 PM	34,015	250	.2	0	.2	.2
2:00 PM – 3:00 PM	31,975	275	.2	0	.2	.2
2:00 PM – 3:00 PM	30,080	300	0	0	0	0
2:00 PM – 3:00 PM	28,308	325	.2	0	.2	.2
2:00 PM – 3:00 PM	26,644	350	.2	0	.2	.2
2:00 PM – 3:00 PM	25,074	375	.1	0	.1	.1
2:00 PM – 3:00 PM	23,586	400	.1	0	.1	.1
2:00 PM – 3:00 PM	22,171	425	0	0	0	0
2:00 PM – 3:00 PM	20,823	450	0	0	0	0
2:00 PM – 3:00 PM	19,533	475	0	0	0	0
2:00 PM – 3:00 PM	18,298	500	.1	0	.1	.1

2:00 PM – 3:00 PM	17,112	525	.1	0	.1	.1
2:00 PM – 3:00 PM	15,970	550	.1	0	.1	.1
2:00 PM – 3:00 PM	14,870	575	0	0	0	0
2:00 PM – 3:00 PM	13,808	600	.1	0	.1	.1
2:00 PM – 3:00 PM	12,781	625	.1	0	.1	.1
2:00 PM – 3:00 PM	11,786	650	.2	0	.2	.2
2:00 PM – 3:00 PM	10,823	675	.1	0	.1	.1
2:00 PM – 3:00 PM	9,888	700	.1	0	.1	.1
2:00 PM – 3:00 PM	8,979	725	0	0	0	0
2:00 PM – 3:00 PM	8,095	750	0	0	0	0
2:00 PM – 3:00 PM	7,235	775	0	0	0	0
2:00 PM – 3:00 PM	6,398	800	.1	0	.1	.1
2:00 PM – 3:00 PM	5,581	825	0	0	0	0
2:00 PM – 3:00 PM	4,784	850	.1	0	.1	.1
2:00 PM – 3:00 PM	4,005	875	.2	0	.2	.2
2:00 PM – 3:00 PM	3,245	900	.1	0	.1	.1
2:00 PM – 3:00 PM	2,501	925	.2	0	.2	.2
2:00 PM – 3:00 PM	1,774	950	.1	0	.1	.1
2:00 PM – 3:00 PM	1,062	975	.1	0	.1	.1
2:00 PM – 3:00 PM	364	1000	.2	0	.2	.2
3:00 PM – 4:00 PM	52,947	100	0	0	0	0
3:00 PM – 4:00 PM	48,448	125	.2	0	.2	.2
3:00 PM – 4:00 PM	44,073	150	.2	0	.2	.2
3:00 PM – 4:00 PM	41,074	175	.3	0	.3	.3
3:00 PM – 4:00 PM	38,623	200	.8	0	.8	.8
3:00 PM – 4:00 PM	36,498	225	0	0	0	0
3:00 PM – 4:00 PM	34,015	250	.3	0	.3	.3
3:00 PM – 4:00 PM	31,975	275	.1	0	.1	.1
3:00 PM – 4:00 PM	30,080	300	.2	0	.2	.2
3:00 PM – 4:00 PM	28,308	325	.3	0	.3	.3
3:00 PM – 4:00 PM	26,644	350	.2	0	.2	.2
3:00 PM – 4:00 PM	25,074	375	.2	0	.2	.2
3:00 PM – 4:00 PM	23,586	400	.2	0	.2	.2
3:00 PM – 4:00 PM	22,171	425	.1	0	.1	.1
3:00 PM – 4:00 PM	20,823	450	.2	0	.2	.2
3:00 PM – 4:00 PM	19,533	475	.2	0	.2	.2
3:00 PM – 4:00 PM	18,298	500	.2	0	.2	.2
3:00 PM – 4:00 PM	17,112	525	.2	0	.2	.2
3:00 PM – 4:00 PM	15,970	550	.2	0	.2	.2
3:00 PM – 4:00 PM	14,870	575	.2	0	.2	.2
3:00 PM – 4:00 PM	13,808	600	.1	0	.1	.1
3:00 PM – 4:00 PM	12,781	625	.2	0	.2	.2
3:00 PM – 4:00 PM	11,786	650	.2	0	.2	.2
3:00 PM – 4:00 PM	10,823	675	.1	0	.1	.1
3:00 PM – 4:00 PM	9,888	700	.3	0	.3	.3
3:00 PM – 4:00 PM	8,979	725	.5	0	.5	.5
3:00 PM – 4:00 PM	8,095	750	.2	0	.2	.2
3:00 PM – 4:00 PM	7,235	775	.2	0	.2	.2
3:00 PM – 4:00 PM	6,398	800	0	0	0	0
3:00 PM – 4:00 PM	5,581	825	.3	0	.3	.3
3:00 PM – 4:00 PM	4,784	850	.2	0	.2	.2
3:00 PM – 4:00 PM	4,005	875	.2	0	.2	.2
3:00 PM – 4:00 PM	3,245	900	.1	0	.1	.1

3:00 PM – 4:00 PM	2,501	925	.2	0	.2	.2
3:00 PM – 4:00 PM	1,774	950	.3	0	.3	.3
3:00 PM – 4:00 PM	1,062	975	.2	0	.2	.2
3:00 PM – 4:00 PM	364	1000	.2	0	.2	.2
4:00 PM – 5:00 PM	<i>No data</i>					
5:00 PM – 6:00 PM	<i>No data</i>					
6:00 PM – 7:00 PM	52,947	100	0	0	0	0
6:00 PM – 7:00 PM	48,448	125	.2	0	.2	.2
6:00 PM – 7:00 PM	44,073	150	.1	0	.1	.1
6:00 PM – 7:00 PM	41,074	175	.6	0	.6	.6
6:00 PM – 7:00 PM	38,623	200	.2	0	.2	.2
6:00 PM – 7:00 PM	36,498	225	.1	0	.1	.1
6:00 PM – 7:00 PM	34,015	250	.1	0	.1	.1
6:00 PM – 7:00 PM	31,975	275	.1	0	.1	.1
6:00 PM – 7:00 PM	30,080	300	.2	0	.2	.2
6:00 PM – 7:00 PM	28,308	325	.2	0	.2	.2
6:00 PM – 7:00 PM	26,644	350	.1	0	.1	.1
6:00 PM – 7:00 PM	25,074	375	0	0	0	0
6:00 PM – 7:00 PM	23,586	400	0	0	0	0
6:00 PM – 7:00 PM	22,171	425	0	0	0	0
6:00 PM – 7:00 PM	20,823	450	0	0	0	0
6:00 PM – 7:00 PM	19,533	475	.2	0	.2	.2
6:00 PM – 7:00 PM	18,298	500	.2	0	.2	.2
6:00 PM – 7:00 PM	17,112	525	.3	0	.3	.3
6:00 PM – 7:00 PM	15,970	550	.2	0	.2	.2
6:00 PM – 7:00 PM	14,870	575	.2	0	.2	.2
6:00 PM – 7:00 PM	13,808	600	.2	0	.2	.2
6:00 PM – 7:00 PM	12,781	625	.2	0	.2	.2
6:00 PM – 7:00 PM	11,786	650	.1	0	.1	.1
6:00 PM – 7:00 PM	10,823	675	.1	0	.1	.1
6:00 PM – 7:00 PM	9,888	700	.1	0	.1	.1
6:00 PM – 7:00 PM	8,979	725	0	0	0	0
6:00 PM – 7:00 PM	8,095	750	.1	0	.1	.1
6:00 PM – 7:00 PM	7,235	775	.2	0	.2	.2
6:00 PM – 7:00 PM	6,398	800	.1	0	.1	.1
6:00 PM – 7:00 PM	5,581	825	.1	0	.1	.1
6:00 PM – 7:00 PM	4,784	850	.3	0	.3	.3
6:00 PM – 7:00 PM	4,005	875	.1	0	.1	.1
6:00 PM – 7:00 PM	3,245	900	.1	0	.1	.1
6:00 PM – 7:00 PM	2,501	925	.3	0	.3	.3
6:00 PM – 7:00 PM	1,774	950	.4	0	.4	.4
6:00 PM – 7:00 PM	1,062	975	.1	0	.1	.1
6:00 PM – 7:00 PM	364	1000	.2	0	.2	.2
7:00 PM – 8:00 PM	52,947	100	.1	0	.1	.1
7:00 PM – 8:00 PM	48,448	125	.1	0	.1	.1
7:00 PM – 8:00 PM	44,073	150	.2	0	.2	.2
7:00 PM – 8:00 PM	41,074	175	.1	0	.1	.1
7:00 PM – 8:00 PM	38,623	200	0	0	0	0
7:00 PM – 8:00 PM	36,498	225	.2	0	.2	.2
7:00 PM – 8:00 PM	34,015	250	.5	0	.5	.5
7:00 PM – 8:00 PM	31,975	275	.4	0	.4	.4
7:00 PM – 8:00 PM	30,080	300	.3	0	.3	.3
7:00 PM – 8:00 PM	28,308	325	.2	0	.2	.2

7:00 PM – 8:00 PM	26,644	350	0	0	0	0
7:00 PM – 8:00 PM	25,074	375	0	0	0	0
7:00 PM – 8:00 PM	23,586	400	0	0	0	0
7:00 PM – 8:00 PM	22,171	425	0	0	0	0
7:00 PM – 8:00 PM	20,823	450	0	0	0	0
7:00 PM – 8:00 PM	19,533	475	0	0	0	0
7:00 PM – 8:00 PM	18,298	500	0	0	0	0
7:00 PM – 8:00 PM	17,112	525	0	0	0	0
7:00 PM – 8:00 PM	15,970	550	.1	0	.1	.1
7:00 PM – 8:00 PM	14,870	575	.1	0	.1	.1
7:00 PM – 8:00 PM	13,808	600	0	0	0	0
7:00 PM – 8:00 PM	12,781	625	0	0	0	0
7:00 PM – 8:00 PM	11,786	650	0	0	0	0
7:00 PM – 8:00 PM	10,823	675	.1	0	.1	.1
7:00 PM – 8:00 PM	9,888	700	.1	0	.1	.1
7:00 PM – 8:00 PM	8,979	725	.2	0	.2	.2
7:00 PM – 8:00 PM	8,095	750	.2	0	.2	.2
7:00 PM – 8:00 PM	7,235	775	.1	0	.1	.1
7:00 PM – 8:00 PM	6,398	800	.2	0	.2	.2
7:00 PM – 8:00 PM	5,581	825	0	0	0	0
7:00 PM – 8:00 PM	4,784	850	0	0	0	0
7:00 PM – 8:00 PM	4,005	875	.2	0	.2	.2
7:00 PM – 8:00 PM	3,245	900	.2	0	.2	.2
7:00 PM – 8:00 PM	2,501	925	.1	0	.1	.1
7:00 PM – 8:00 PM	1,774	950	.2	0	.2	.2
7:00 PM – 8:00 PM	1,062	975	.5	0	.5	.5
7:00 PM – 8:00 PM	364	1000	.8	0	.8	.8
8:00 PM – 9:00 PM	52,947	100	0	0	0	0
8:00 PM – 9:00 PM	48,448	125	.1	0	.1	.1
8:00 PM – 9:00 PM	44,073	150	0	0	0	0
8:00 PM – 9:00 PM	41,074	175	.1	0	.1	.1
8:00 PM – 9:00 PM	38,623	200	.2	0	.2	.2
8:00 PM – 9:00 PM	36,498	225	.4	0	.4	.4
8:00 PM – 9:00 PM	34,015	250	.5	0	.5	.5
8:00 PM – 9:00 PM	31,975	275	.4	0	.4	.4
8:00 PM – 9:00 PM	30,080	300	.1	0	.1	.1
8:00 PM – 9:00 PM	28,308	325	0	0	0	0
8:00 PM – 9:00 PM	26,644	350	.1	0	.1	.1
8:00 PM – 9:00 PM	25,074	375	0	0	0	0
8:00 PM – 9:00 PM	23,586	400	0	0	0	0
8:00 PM – 9:00 PM	22,171	425	0	0	0	0
8:00 PM – 9:00 PM	20,823	450	0	0	0	0
8:00 PM – 9:00 PM	19,533	475	.1	0	.1	.1
8:00 PM – 9:00 PM	18,298	500	0	0	0	0
8:00 PM – 9:00 PM	17,112	525	0	0	0	0
8:00 PM – 9:00 PM	15,970	550	0	0	0	0
8:00 PM – 9:00 PM	14,870	575	0	0	0	0
8:00 PM – 9:00 PM	13,808	600	.1	0	.1	.1
8:00 PM – 9:00 PM	12,781	625	.1	0	.1	.1
8:00 PM – 9:00 PM	11,786	650	.2	0	.2	.2
8:00 PM – 9:00 PM	10,823	675	.1	0	.1	.1
8:00 PM – 9:00 PM	9,888	700	.1	0	.1	.1
8:00 PM – 9:00 PM	8,979	725	.1	0	.1	.1

8:00 PM – 9:00 PM	8,095	750	.1	0	.1	.1
8:00 PM – 9:00 PM	7,235	775	.1	0	.1	.1
8:00 PM – 9:00 PM	6,398	800	0	0	0	0
8:00 PM – 9:00 PM	5,581	825	.1	0	.1	.1
8:00 PM – 9:00 PM	4,784	850	0	0	0	0
8:00 PM – 9:00 PM	4,005	875	.3	0	.3	.3
8:00 PM – 9:00 PM	3,245	900	.3	0	.3	.3
8:00 PM – 9:00 PM	2,501	925	.2	0	.2	.2
8:00 PM – 9:00 PM	1,774	950	.2	0	.2	.2
8:00 PM – 9:00 PM	1,062	975	.4	0	.4	.4
8:00 PM – 9:00 PM	364	1000	.6	0	.6	.6
9:00 PM – 10:00 PM	52,947	100	0	0	0	0
9:00 PM – 10:00 PM	48,448	125	.3	0	.3	.3
9:00 PM – 10:00 PM	44,073	150	0	0	0	0
9:00 PM – 10:00 PM	41,074	175	.1	0	.1	.1
9:00 PM – 10:00 PM	38,623	200	.1	0	.1	.1
9:00 PM – 10:00 PM	36,498	225	0	0	0	0
9:00 PM – 10:00 PM	34,015	250	.1	0	.1	.1
9:00 PM – 10:00 PM	31,975	275	.5	0	.5	.5
9:00 PM – 10:00 PM	30,080	300	0	0	0	0
9:00 PM – 10:00 PM	28,308	325	.1	0	.1	.1
9:00 PM – 10:00 PM	26,644	350	.1	0	.1	.1
9:00 PM – 10:00 PM	25,074	375	.1	0	.1	.1
9:00 PM – 10:00 PM	23,586	400	0	0	0	0
9:00 PM – 10:00 PM	22,171	425	0	0	0	0
9:00 PM – 10:00 PM	20,823	450	0	0	0	0
9:00 PM – 10:00 PM	19,533	475	0	0	0	0
9:00 PM – 10:00 PM	18,298	500	0	0	0	0
9:00 PM – 10:00 PM	17,112	525	0	0	0	0
9:00 PM – 10:00 PM	15,970	550	0	0	0	0
9:00 PM – 10:00 PM	14,870	575	0	0	0	0
9:00 PM – 10:00 PM	13,808	600	0	0	0	0
9:00 PM – 10:00 PM	12,781	625	.1	0	.1	.1
9:00 PM – 10:00 PM	11,786	650	.1	0	.1	.1
9:00 PM – 10:00 PM	10,823	675	.1	0	.1	.1
9:00 PM – 10:00 PM	9,888	700	.2	0	.2	.2
9:00 PM – 10:00 PM	8,979	725	0	0	0	0
9:00 PM – 10:00 PM	8,095	750	.1	0	.1	.1
9:00 PM – 10:00 PM	7,235	775	.1	0	.1	.1
9:00 PM – 10:00 PM	6,398	800	.1	0	.1	.1
9:00 PM – 10:00 PM	5,581	825	0	0	0	0
9:00 PM – 10:00 PM	4,784	850	.1	0	.1	.1
9:00 PM – 10:00 PM	4,005	875	.2	0	.2	.2
9:00 PM – 10:00 PM	3,245	900	.2	0	.2	.2
9:00 PM – 10:00 PM	2,501	925	.1	0	.1	.1
9:00 PM – 10:00 PM	1,774	950	.2	0	.2	.2
9:00 PM – 10:00 PM	1,062	975	.2	0	.2	.2
9:00 PM – 10:00 PM	364	1000	.4	0	.4	.4
10:00 PM – 11:00 PM	52,947	100	.1	0	.1	.1
10:00 PM – 11:00 PM	48,448	125	.3	0	.3	.3
10:00 PM – 11:00 PM	44,073	150	.1	0	.1	.1
10:00 PM – 11:00 PM	41,074	175	.1	0	.1	.1
10:00 PM – 11:00 PM	38,623	200	.1	0	.1	.1

10:00 PM – 11:00 PM	36,498	225	.1	0	.1	.1
10:00 PM – 11:00 PM	34,015	250	.1	0	.1	.1
10:00 PM – 11:00 PM	31,975	275	.3	0	.3	.3
10:00 PM – 11:00 PM	30,080	300	0	0	0	0
10:00 PM – 11:00 PM	28,308	325	.1	0	.1	.1
10:00 PM – 11:00 PM	26,644	350	.2	0	.2	.2
10:00 PM – 11:00 PM	25,074	375	0	0	0	0
10:00 PM – 11:00 PM	23,586	400	0	0	0	0
10:00 PM – 11:00 PM	22,171	425	0	0	0	0
10:00 PM – 11:00 PM	20,823	450	0	0	0	0
10:00 PM – 11:00 PM	19,533	475	.1	0	.1	.1
10:00 PM – 11:00 PM	18,298	500	0	0	0	0
10:00 PM – 11:00 PM	17,112	525	0	0	0	0
10:00 PM – 11:00 PM	15,970	550	.1	0	.1	.1
10:00 PM – 11:00 PM	14,870	575	.1	0	.1	.1
10:00 PM – 11:00 PM	13,808	600	.1	0	.1	.1
10:00 PM – 11:00 PM	12,781	625	.1	0	.1	.1
10:00 PM – 11:00 PM	11,786	650	.1	0	.1	.1
10:00 PM – 11:00 PM	10,823	675	0	0	0	0
10:00 PM – 11:00 PM	9,888	700	.1	0	.1	.1
10:00 PM – 11:00 PM	8,979	725	.1	0	.1	.1
10:00 PM – 11:00 PM	8,095	750	.1	0	.1	.1
10:00 PM – 11:00 PM	7,235	775	0	0	0	0
10:00 PM – 11:00 PM	6,398	800	0	0	0	0
10:00 PM – 11:00 PM	5,581	825	.1	0	.1	.1
10:00 PM – 11:00 PM	4,784	850	.2	0	.2	.2
10:00 PM – 11:00 PM	4,005	875	.3	0	.3	.3
10:00 PM – 11:00 PM	3,245	900	0	0	0	0
10:00 PM – 11:00 PM	2,501	925	.1	0	.1	.1
10:00 PM – 11:00 PM	1,774	950	.4	0	.4	.4
10:00 PM – 11:00 PM	1,062	975	.2	0	.2	.2
10:00 PM – 11:00 PM	364	1000	.2	0	.2	.2
11:00 PM – 12:00 AM	52,947	100	.1	0	.1	.1
11:00 PM – 12:00 AM	48,448	125	.1	0	.1	.1
11:00 PM – 12:00 AM	44,073	150	0	0	0	0
11:00 PM – 12:00 AM	41,074	175	1.4	0	1.4	1.4
11:00 PM – 12:00 AM	38,623	200	.4	0	.4	.4
11:00 PM – 12:00 AM	36,498	225	.3	0	.3	.3
11:00 PM – 12:00 AM	34,015	250	.9	0	.9	.9
11:00 PM – 12:00 AM	31,975	275	.1	0	.1	.1
11:00 PM – 12:00 AM	30,080	300	0	0	0	0
11:00 PM – 12:00 AM	28,308	325	.4	0	.4	.4
11:00 PM – 12:00 AM	26,644	350	.3	0	.3	.3
11:00 PM – 12:00 AM	25,074	375	0	0	0	0
11:00 PM – 12:00 AM	23,586	400	.2	0	.2	.2
11:00 PM – 12:00 AM	22,171	425	.3	0	.3	.3
11:00 PM – 12:00 AM	20,823	450	.4	0	.4	.4
11:00 PM – 12:00 AM	19,533	475	.5	0	.5	.5
11:00 PM – 12:00 AM	18,298	500	.6	0	.6	.6
11:00 PM – 12:00 AM	17,112	525	.9	0	.9	.9
11:00 PM – 12:00 AM	15,970	550	.9	0	.9	.9
11:00 PM – 12:00 AM	14,870	575	.9	0	.9	.9
11:00 PM – 12:00 AM	13,808	600	.9	0	.9	.9

11:00 PM – 12:00 AM	12,781	625	.9	0	.9	.9
11:00 PM – 12:00 AM	11,786	650	.8	0	.8	.8
11:00 PM – 12:00 AM	10,823	675	.5	0	.5	.5
11:00 PM – 12:00 AM	9,888	700	.5	0	.5	.5
11:00 PM – 12:00 AM	8,979	725	.5	0	.5	.5
11:00 PM – 12:00 AM	8,095	750	.4	0	.4	.4
11:00 PM – 12:00 AM	7,235	775	.3	0	.3	.3
11:00 PM – 12:00 AM	6,398	800	.5	0	.5	.5
11:00 PM – 12:00 AM	5,581	825	.1	0	.1	.1
11:00 PM – 12:00 AM	4,784	850	.1	0	.1	.1
11:00 PM – 12:00 AM	4,005	875	.1	0	.1	.1
11:00 PM – 12:00 AM	3,245	900	0	0	0	0
11:00 PM – 12:00 AM	2,501	925	.1	0	.1	.1
11:00 PM – 12:00 AM	1,774	950	.2	0	.2	.2
11:00 PM – 12:00 AM	1,062	975	.2	0	.2	.2
11:00 PM – 12:00 AM	364	1000	.3	0	.3	.3
12:00 AM – 1:00 AM	52,947	100	0	0	0	0
12:00 AM – 1:00 AM	48,448	125	.2	0	.2	.2
12:00 AM – 1:00 AM	44,073	150	0	0	0	0
12:00 AM – 1:00 AM	41,074	175	.6	0	.6	.6
12:00 AM – 1:00 AM	38,623	200	.1	0	.1	.1
12:00 AM – 1:00 AM	36,498	225	.1	0	.1	.1
12:00 AM – 1:00 AM	34,015	250	.1	0	.1	.1
12:00 AM – 1:00 AM	31,975	275	.4	0	.4	.4
12:00 AM – 1:00 AM	30,080	300	.1	0	.1	.1
12:00 AM – 1:00 AM	28,308	325	.2	0	.2	.2
12:00 AM – 1:00 AM	26,644	350	.1	0	.1	.1
12:00 AM – 1:00 AM	25,074	375	.1	0	.1	.1
12:00 AM – 1:00 AM	23,586	400	.1	0	.1	.1
12:00 AM – 1:00 AM	22,171	425	0	0	0	0
12:00 AM – 1:00 AM	20,823	450	.1	0	.1	.1
12:00 AM – 1:00 AM	19,533	475	.2	0	.2	.2
12:00 AM – 1:00 AM	18,298	500	.2	0	.2	.2
12:00 AM – 1:00 AM	17,112	525	.3	0	.3	.3
12:00 AM – 1:00 AM	15,970	550	.4	0	.4	.4
12:00 AM – 1:00 AM	14,870	575	.4	0	.4	.4
12:00 AM – 1:00 AM	13,808	600	.5	0	.5	.5
12:00 AM – 1:00 AM	12,781	625	.4	0	.4	.4
12:00 AM – 1:00 AM	11,786	650	.4	0	.4	.4
12:00 AM – 1:00 AM	10,823	675	.2	0	.2	.2
12:00 AM – 1:00 AM	9,888	700	.3	0	.3	.3
12:00 AM – 1:00 AM	8,979	725	.4	0	.4	.4
12:00 AM – 1:00 AM	8,095	750	.3	0	.3	.3
12:00 AM – 1:00 AM	7,235	775	.2	0	.2	.2
12:00 AM – 1:00 AM	6,398	800	.3	0	.3	.3
12:00 AM – 1:00 AM	5,581	825	.1	0	.1	.1
12:00 AM – 1:00 AM	4,784	850	0	0	0	0
12:00 AM – 1:00 AM	4,005	875	.1	0	.1	.1
12:00 AM – 1:00 AM	3,245	900	.1	0	.1	.1
12:00 AM – 1:00 AM	2,501	925	.2	0	.2	.2
12:00 AM – 1:00 AM	1,774	950	.1	0	.1	.1
12:00 AM – 1:00 AM	1,062	975	.1	0	.1	.1
12:00 AM – 1:00 AM	364	1000	.3	0	.3	.3

Table B-3: Statistical Results for Wind Direction Deviation Values Grouped by Altitude and Hour for 5/26/99

The table shown below displays the statistical results for wind direction deviations grouped first by altitude then by hour for May 26, 1999 for the time span of 10:00 AM until 12:00 AM.

Comparison Hour on 5/26/99	Altitude (ft)	Pressure (Mb)	Average Deviation (degrees)	Standard Deviation (degrees)	Max. Deviation (degrees)	Min. Deviation (degrees)
10:00 AM – 11:00 AM	52,947	100	4.1704	0	4.1704	4.1704
10:00 AM – 11:00 AM	48,448	125	1.1481	0	1.1481	1.1481
10:00 AM – 11:00 AM	44,073	150	1.9387	0	1.9387	1.9387
10:00 AM – 11:00 AM	41,074	175	1.9532	0	1.9532	1.9532
10:00 AM – 11:00 AM	38,623	200	3.5244	0	3.5244	3.5244
10:00 AM – 11:00 AM	36,498	225	.0179	0	.0179	.0179
10:00 AM – 11:00 AM	34,015	250	.0897	0	.0897	.0897
10:00 AM – 11:00 AM	31,975	275	.4972	0	.4972	.4972
10:00 AM – 11:00 AM	30,080	300	1.6307	0	1.6307	1.6307
10:00 AM – 11:00 AM	28,308	325	2.014	0	2.014	2.014
10:00 AM – 11:00 AM	26,644	350	1.9854	0	1.9854	1.9854
10:00 AM – 11:00 AM	25,074	375	1.0518	0	1.0518	1.0518
10:00 AM – 11:00 AM	23,586	400	.8299	0	.8299	.8299
10:00 AM – 11:00 AM	22,171	425	.643	0	.643	.643
10:00 AM – 11:00 AM	20,823	450	.8525	0	.8525	.8525
10:00 AM – 11:00 AM	19,533	475	.8272	0	.8272	.8272
10:00 AM – 11:00 AM	18,298	500	.783	0	.783	.783
10:00 AM – 11:00 AM	17,112	525	.1432	0	.1432	.1432
10:00 AM – 11:00 AM	15,970	550	.3404	0	.3404	.3404
10:00 AM – 11:00 AM	14,870	575	.5313	0	.5313	.5313
10:00 AM – 11:00 AM	13,808	600	.1811	0	.1811	.1811
10:00 AM – 11:00 AM	12,781	625	.2724	0	.2724	.2724
10:00 AM – 11:00 AM	11,786	650	1.7277	0	1.7277	1.7277
10:00 AM – 11:00 AM	10,823	675	1.4994	0	1.4994	1.4994
10:00 AM – 11:00 AM	9,888	700	1.1895	0	1.1895	1.1895
10:00 AM – 11:00 AM	8,979	725	.0744	0	.0744	.0744
10:00 AM – 11:00 AM	8,095	750	.6059	0	.6059	.6059
10:00 AM – 11:00 AM	7,235	775	.2203	0	.2203	.2203
10:00 AM – 11:00 AM	6,398	800	.7456	0	.7456	.7456
10:00 AM – 11:00 AM	5,581	825	.6506	0	.6506	.6506
10:00 AM – 11:00 AM	4,784	850	2.2661	0	2.2661	2.2661
10:00 AM – 11:00 AM	4,005	875	1.8863	0	1.8863	1.8863
10:00 AM – 11:00 AM	3,245	900	.5935	0	.5935	.5935
10:00 AM – 11:00 AM	2,501	925	1.1754	0	1.1754	1.1754
10:00 AM – 11:00 AM	1,774	950	.6967	0	.6967	.6967
10:00 AM – 11:00 AM	1,062	975	3.5323	0	3.5323	3.5323
10:00 AM – 11:00 AM	364	1000	.0745	0	.0745	.0745
11:00 AM – 12:00 PM	52,947	100	3.7565	0	3.7565	3.7565
11:00 AM – 12:00 PM	48,448	125	.9594	0	.9594	.9594
11:00 AM – 12:00 PM	44,073	150	1.739	0	1.739	1.739
11:00 AM – 12:00 PM	41,074	175	1.5421	0	1.5421	1.5421
11:00 AM – 12:00 PM	38,623	200	2.2971	0	2.2971	2.2971
11:00 AM – 12:00 PM	36,498	225	2.0637	0	2.0637	2.0637

11:00 AM – 12:00 PM	34,015	250	1.3178	0	1.3178	1.3178
11:00 AM – 12:00 PM	31,975	275	.1221	0	.1221	.1221
11:00 AM – 12:00 PM	30,080	300	1.3999	0	1.3999	1.3999
11:00 AM – 12:00 PM	28,308	325	1.2262	0	1.2262	1.2262
11:00 AM – 12:00 PM	26,644	350	2.9365	0	2.9365	2.9365
11:00 AM – 12:00 PM	25,074	375	2.7415	0	2.7415	2.7415
11:00 AM – 12:00 PM	23,586	400	2.2863	0	2.2863	2.2863
11:00 AM – 12:00 PM	22,171	425	1.4004	0	1.4004	1.4004
11:00 AM – 12:00 PM	20,823	450	.2894	0	.2894	.2894
11:00 AM – 12:00 PM	19,533	475	1.1912	0	1.1912	1.1912
11:00 AM – 12:00 PM	18,298	500	2.5707	0	2.5707	2.5707
11:00 AM – 12:00 PM	17,112	525	3.5133	0	3.5133	3.5133
11:00 AM – 12:00 PM	15,970	550	3.9172	0	3.9172	3.9172
11:00 AM – 12:00 PM	14,870	575	3.8616	0	3.8616	3.8616
11:00 AM – 12:00 PM	13,808	600	3.241	0	3.241	3.241
11:00 AM – 12:00 PM	12,781	625	2.2977	0	2.2977	2.2977
11:00 AM – 12:00 PM	11,786	650	.7943	0	.7943	.7943
11:00 AM – 12:00 PM	10,823	675	.3301	0	.3301	.3301
11:00 AM – 12:00 PM	9,888	700	.08	0	.08	.08
11:00 AM – 12:00 PM	8,979	725	.0953	0	.0953	.0953
11:00 AM – 12:00 PM	8,095	750	.6462	0	.6462	.6462
11:00 AM – 12:00 PM	7,235	775	.9855	0	.9855	.9855
11:00 AM – 12:00 PM	6,398	800	1.5417	0	1.5417	1.5417
11:00 AM – 12:00 PM	5,581	825	3.1872	0	3.1872	3.1872
11:00 AM – 12:00 PM	4,784	850	2.8705	0	2.8705	2.8705
11:00 AM – 12:00 PM	4,005	875	.3937	0	.3937	.3937
11:00 AM – 12:00 PM	3,245	900	.1277	0	.1277	.1277
11:00 AM – 12:00 PM	2,501	925	.381	0	.381	.381
11:00 AM – 12:00 PM	1,774	950	.281	0	.281	.281
11:00 AM – 12:00 PM	1,062	975	.1047	0	.1047	.1047
11:00 AM – 12:00 PM	364	1000	.1618	0	.1618	.1618
12:00 PM – 1:00 PM	52,947	100	.5273	0	.5273	.5273
12:00 PM – 1:00 PM	48,448	125	1.3806	0	1.3806	1.3806
12:00 PM – 1:00 PM	44,073	150	.0158	0	.0158	.0158
12:00 PM – 1:00 PM	41,074	175	.8525	0	.8525	.8525
12:00 PM – 1:00 PM	38,623	200	.904	0	.904	.904
12:00 PM – 1:00 PM	36,498	225	2.1359	0	2.1359	2.1359
12:00 PM – 1:00 PM	34,015	250	.1785	0	.1785	.1785
12:00 PM – 1:00 PM	31,975	275	1.4168	0	1.4168	1.4168
12:00 PM – 1:00 PM	30,080	300	.5923	0	.5923	.5923
12:00 PM – 1:00 PM	28,308	325	1.287	0	1.287	1.287
12:00 PM – 1:00 PM	26,644	350	.3008	0	.3008	.3008
12:00 PM – 1:00 PM	25,074	375	1.2636	0	1.2636	1.2636
12:00 PM – 1:00 PM	23,586	400	1.2344	0	1.2344	1.2344
12:00 PM – 1:00 PM	22,171	425	.8648	0	.8648	.8648
12:00 PM – 1:00 PM	20,823	450	.2037	0	.2037	.2037
12:00 PM – 1:00 PM	19,533	475	.5397	0	.5397	.5397
12:00 PM – 1:00 PM	18,298	500	.9677	0	.9677	.9677
12:00 PM – 1:00 PM	17,112	525	.5855	0	.5855	.5855
12:00 PM – 1:00 PM	15,970	550	1.1828	0	1.1828	1.1828
12:00 PM – 1:00 PM	14,870	575	1.5403	0	1.5403	1.5403
12:00 PM – 1:00 PM	13,808	600	1.0333	0	1.0333	1.0333
12:00 PM – 1:00 PM	12,781	625	.6424	0	.6424	.6424

12:00 PM – 1:00 PM	11,786	650	.6996	0	.6996	.6996
12:00 PM – 1:00 PM	10,823	675	.6253	0	.6253	.6253
12:00 PM – 1:00 PM	9,888	700	.7243	0	.7243	.7243
12:00 PM – 1:00 PM	8,979	725	.173	0	.173	.173
12:00 PM – 1:00 PM	8,095	750	.1279	0	.1279	.1279
12:00 PM – 1:00 PM	7,235	775	.2058	0	.2058	.2058
12:00 PM – 1:00 PM	6,398	800	0	0	0	0
12:00 PM – 1:00 PM	5,581	825	.5602	0	.5602	.5602
12:00 PM – 1:00 PM	4,784	850	.8792	0	.8792	.8792
12:00 PM – 1:00 PM	4,005	875	1.0266	0	1.0266	1.0266
12:00 PM – 1:00 PM	3,245	900	1.007	0	1.007	1.007
12:00 PM – 1:00 PM	2,501	925	2.47	0	2.47	2.47
12:00 PM – 1:00 PM	1,774	950	2.1225	0	2.1225	2.1225
12:00 PM – 1:00 PM	1,062	975	.4815	0	.4815	.4815
12:00 PM – 1:00 PM	364	1000	.4743	0	.4743	.4743
1:00 PM – 2:00 PM	52,947	100	.5453	0	.5453	.5453
1:00 PM – 2:00 PM	48,448	125	.9025	0	.9025	.9025
1:00 PM – 2:00 PM	44,073	150	1.0547	0	1.0547	1.0547
1:00 PM – 2:00 PM	41,074	175	1.1477	0	1.1477	1.1477
1:00 PM – 2:00 PM	38,623	200	1.3944	0	1.3944	1.3944
1:00 PM – 2:00 PM	36,498	225	2.3891	0	2.3891	2.3891
1:00 PM – 2:00 PM	34,015	250	.9888	0	.9888	.9888
1:00 PM – 2:00 PM	31,975	275	.4878	0	.4878	.4878
1:00 PM – 2:00 PM	30,080	300	.3359	0	.3359	.3359
1:00 PM – 2:00 PM	28,308	325	.5944	0	.5944	.5944
1:00 PM – 2:00 PM	26,644	350	.3524	0	.3524	.3524
1:00 PM – 2:00 PM	25,074	375	.4361	0	.4361	.4361
1:00 PM – 2:00 PM	23,586	400	1.9483	0	1.9483	1.9483
1:00 PM – 2:00 PM	22,171	425	2.8113	0	2.8113	2.8113
1:00 PM – 2:00 PM	20,823	450	2.5739	0	2.5739	2.5739
1:00 PM – 2:00 PM	19,533	475	1.9717	0	1.9717	1.9717
1:00 PM – 2:00 PM	18,298	500	.9807	0	.9807	.9807
1:00 PM – 2:00 PM	17,112	525	.4372	0	.4372	.4372
1:00 PM – 2:00 PM	15,970	550	2.5598	0	2.5598	2.5598
1:00 PM – 2:00 PM	14,870	575	5.4426	0	5.4426	5.4426
1:00 PM – 2:00 PM	13,808	600	1.6056	0	1.6056	1.6056
1:00 PM – 2:00 PM	12,781	625	.1447	0	.1447	.1447
1:00 PM – 2:00 PM	11,786	650	.9821	0	.9821	.9821
1:00 PM – 2:00 PM	10,823	675	1.3443	0	1.3443	1.3443
1:00 PM – 2:00 PM	9,888	700	.8115	0	.8115	.8115
1:00 PM – 2:00 PM	8,979	725	1.4248	0	1.4248	1.4248
1:00 PM – 2:00 PM	8,095	750	1.2747	0	1.2747	1.2747
1:00 PM – 2:00 PM	7,235	775	.1236	0	.1236	.1236
1:00 PM – 2:00 PM	6,398	800	.1753	0	.1753	.1753
1:00 PM – 2:00 PM	5,581	825	.2486	0	.2486	.2486
1:00 PM – 2:00 PM	4,784	850	1.6403	0	1.6403	1.6403
1:00 PM – 2:00 PM	4,005	875	2.0978	0	2.0978	2.0978
1:00 PM – 2:00 PM	3,245	900	4.2296	0	4.2296	4.2296
1:00 PM – 2:00 PM	2,501	925	3.3012	0	3.3012	3.3012
1:00 PM – 2:00 PM	1,774	950	2.7014	0	2.7014	2.7014
1:00 PM – 2:00 PM	1,062	975	.2498	0	.2498	.2498
1:00 PM – 2:00 PM	364	1000	1.5221	0	1.5221	1.5221
2:00 PM – 3:00 PM	52,947	100	.9482	0	.9482	.9482

2:00 PM – 3:00 PM	48,448	125	2.2846	0	2.2846	2.2846
2:00 PM – 3:00 PM	44,073	150	2.8859	0	2.8859	2.8859
2:00 PM – 3:00 PM	41,074	175	4.8897	0	4.8897	4.8897
2:00 PM – 3:00 PM	38,623	200	2.8929	0	2.8929	2.8929
2:00 PM – 3:00 PM	36,498	225	1.2718	0	1.2718	1.2718
2:00 PM – 3:00 PM	34,015	250	1.1771	0	1.1771	1.1771
2:00 PM – 3:00 PM	31,975	275	.8942	0	.8942	.8942
2:00 PM – 3:00 PM	30,080	300	1.3324	0	1.3324	1.3324
2:00 PM – 3:00 PM	28,308	325	.1321	0	.1321	.1321
2:00 PM – 3:00 PM	26,644	350	2.3648	0	2.3648	2.3648
2:00 PM – 3:00 PM	25,074	375	3.7602	0	3.7602	3.7602
2:00 PM – 3:00 PM	23,586	400	4.8561	0	4.8561	4.8561
2:00 PM – 3:00 PM	22,171	425	4.6069	0	4.6069	4.6069
2:00 PM – 3:00 PM	20,823	450	3.0697	0	3.0697	3.0697
2:00 PM – 3:00 PM	19,533	475	1.208	0	1.208	1.208
2:00 PM – 3:00 PM	18,298	500	.1115	0	.1115	.1115
2:00 PM – 3:00 PM	17,112	525	1.8414	0	1.8414	1.8414
2:00 PM – 3:00 PM	15,970	550	.8297	0	.8297	.8297
2:00 PM – 3:00 PM	14,870	575	2.0229	0	2.0229	2.0229
2:00 PM – 3:00 PM	13,808	600	.9613	0	.9613	.9613
2:00 PM – 3:00 PM	12,781	625	.2018	0	.2018	.2018
2:00 PM – 3:00 PM	11,786	650	1.0175	0	1.0175	1.0175
2:00 PM – 3:00 PM	10,823	675	.634	0	.634	.634
2:00 PM – 3:00 PM	9,888	700	.7201	0	.7201	.7201
2:00 PM – 3:00 PM	8,979	725	.699	0	.699	.699
2:00 PM – 3:00 PM	8,095	750	1.5766	0	1.5766	1.5766
2:00 PM – 3:00 PM	7,235	775	1.7225	0	1.7225	1.7225
2:00 PM – 3:00 PM	6,398	800	1.4784	0	1.4784	1.4784
2:00 PM – 3:00 PM	5,581	825	.5787	0	.5787	.5787
2:00 PM – 3:00 PM	4,784	850	.222	0	.222	.222
2:00 PM – 3:00 PM	4,005	875	.7146	0	.7146	.7146
2:00 PM – 3:00 PM	3,245	900	1.5884	0	1.5884	1.5884
2:00 PM – 3:00 PM	2,501	925	1.7261	0	1.7261	1.7261
2:00 PM – 3:00 PM	1,774	950	1.5893	0	1.5893	1.5893
2:00 PM – 3:00 PM	1,062	975	1.6203	0	1.6203	1.6203
2:00 PM – 3:00 PM	364	1000	3.3451	0	3.3451	3.3451
3:00 PM – 4:00 PM	52,947	100	.3666	0	.3666	.3666
3:00 PM – 4:00 PM	48,448	125	2.0613	0	2.0613	2.0613
3:00 PM – 4:00 PM	44,073	150	2.9887	0	2.9887	2.9887
3:00 PM – 4:00 PM	41,074	175	4.8392	0	4.8392	4.8392
3:00 PM – 4:00 PM	38,623	200	4.2598	0	4.2598	4.2598
3:00 PM – 4:00 PM	36,498	225	1.0284	0	1.0284	1.0284
3:00 PM – 4:00 PM	34,015	250	.6313	0	.6313	.6313
3:00 PM – 4:00 PM	31,975	275	1.1519	0	1.1519	1.1519
3:00 PM – 4:00 PM	30,080	300	.0084	0	.0084	.0084
3:00 PM – 4:00 PM	28,308	325	.0531	0	.0531	.0531
3:00 PM – 4:00 PM	26,644	350	1.3323	0	1.3323	1.3323
3:00 PM – 4:00 PM	25,074	375	.9394	0	.9394	.9394
3:00 PM – 4:00 PM	23,586	400	.6179	0	.6179	.6179
3:00 PM – 4:00 PM	22,171	425	.8809	0	.8809	.8809
3:00 PM – 4:00 PM	20,823	450	.294	0	.294	.294
3:00 PM – 4:00 PM	19,533	475	1.8368	0	1.8368	1.8368
3:00 PM – 4:00 PM	18,298	500	1.6232	0	1.6232	1.6232

3:00 PM – 4:00 PM	17,112	525	.9529	0	.9529	.9529
3:00 PM – 4:00 PM	15,970	550	.3207	0	.3207	.3207
3:00 PM – 4:00 PM	14,870	575	1.02	0	1.02	1.02
3:00 PM – 4:00 PM	13,808	600	1.9709	0	1.9709	1.9709
3:00 PM – 4:00 PM	12,781	625	1.3972	0	1.3972	1.3972
3:00 PM – 4:00 PM	11,786	650	1.0392	0	1.0392	1.0392
3:00 PM – 4:00 PM	10,823	675	1.2892	0	1.2892	1.2892
3:00 PM – 4:00 PM	9,888	700	1.7713	0	1.7713	1.7713
3:00 PM – 4:00 PM	8,979	725	1.6271	0	1.6271	1.6271
3:00 PM – 4:00 PM	8,095	750	1.7092	0	1.7092	1.7092
3:00 PM – 4:00 PM	7,235	775	.7729	0	.7729	.7729
3:00 PM – 4:00 PM	6,398	800	1.001	0	1.001	1.001
3:00 PM – 4:00 PM	5,581	825	2.3881	0	2.3881	2.3881
3:00 PM – 4:00 PM	4,784	850	1.3838	0	1.3838	1.3838
3:00 PM – 4:00 PM	4,005	875	1.1791	0	1.1791	1.1791
3:00 PM – 4:00 PM	3,245	900	2.4468	0	2.4468	2.4468
3:00 PM – 4:00 PM	2,501	925	2.3283	0	2.3283	2.3283
3:00 PM – 4:00 PM	1,774	950	.9801	0	.9801	.9801
3:00 PM – 4:00 PM	1,062	975	.534	0	.534	.534
3:00 PM – 4:00 PM	364	1000	1.2629	0	1.2629	1.2629
4:00 PM- 5:00 PM	52,947	100	2.662	0	2.662	2.662
4:00 PM- 5:00 PM	48,448	125	2.1004	0	2.1004	2.1004
4:00 PM- 5:00 PM	44,073	150	1.414	0	1.414	1.414
4:00 PM- 5:00 PM	41,074	175	.4975	0	.4975	.4975
4:00 PM- 5:00 PM	38,623	200	.9673	0	.9673	.9673
4:00 PM- 5:00 PM	36,498	225	1.0518	0	1.0518	1.0518
4:00 PM- 5:00 PM	34,015	250	2.6647	0	2.6647	2.6647
4:00 PM- 5:00 PM	31,975	275	.6516	0	.6516	.6516
4:00 PM- 5:00 PM	30,080	300	1.6579	0	1.6579	1.6579
4:00 PM- 5:00 PM	28,308	325	1.0347	0	1.0347	1.0347
4:00 PM- 5:00 PM	26,644	350	1.2508	0	1.2508	1.2508
4:00 PM- 5:00 PM	25,074	375	.5868	0	.5868	.5868
4:00 PM- 5:00 PM	23,586	400	.0162	0	.0162	.0162
4:00 PM- 5:00 PM	22,171	425	.241	0	.241	.241
4:00 PM- 5:00 PM	20,823	450	1.2841	0	1.2841	1.2841
4:00 PM- 5:00 PM	19,533	475	.6321	0	.6321	.6321
4:00 PM- 5:00 PM	18,298	500	2.4468	0	2.4468	2.4468
4:00 PM- 5:00 PM	17,112	525	2.5478	0	2.5478	2.5478
4:00 PM- 5:00 PM	15,970	550	1.4472	0	1.4472	1.4472
4:00 PM- 5:00 PM	14,870	575	.162	0	.162	.162
4:00 PM- 5:00 PM	13,808	600	1.1293	0	1.1293	1.1293
4:00 PM- 5:00 PM	12,781	625	1.5668	0	1.5668	1.5668
4:00 PM- 5:00 PM	11,786	650	1.9754	0	1.9754	1.9754
4:00 PM- 5:00 PM	10,823	675	1.6271	0	1.6271	1.6271
4:00 PM- 5:00 PM	9,888	700	1.6991	0	1.6991	1.6991
4:00 PM- 5:00 PM	8,979	725	1.0973	0	1.0973	1.0973
4:00 PM- 5:00 PM	8,095	750	1.4761	0	1.4761	1.4761
4:00 PM- 5:00 PM	7,235	775	1.4913	0	1.4913	1.4913
4:00 PM- 5:00 PM	6,398	800	1.9105	0	1.9105	1.9105
4:00 PM- 5:00 PM	5,581	825	2.3755	0	2.3755	2.3755
4:00 PM- 5:00 PM	4,784	850	.6662	0	.6662	.6662
4:00 PM- 5:00 PM	4,005	875	1.1791	0	1.1791	1.1791
4:00 PM- 5:00 PM	3,245	900	.1377	0	.1377	.1377

4:00 PM- 5:00 PM	2,501	925	.1164	0	.1164	.1164
4:00 PM- 5:00 PM	1,774	950	.9302	0	.9302	.9302
4:00 PM- 5:00 PM	1,062	975	.6431	0	.6431	.6431
4:00 PM- 5:00 PM	364	1000	.2615	0	.2615	.2615
5:00 PM – 6:00 PM	52,947	100	4.005	0	4.005	4.005
5:00 PM – 6:00 PM	48,448	125	.8229	0	.8229	.8229
5:00 PM – 6:00 PM	44,073	150	4.217	0	4.217	4.217
5:00 PM – 6:00 PM	41,074	175	2.0194	0	2.0194	2.0194
5:00 PM – 6:00 PM	38,623	200	1.7629	0	1.7629	1.7629
5:00 PM – 6:00 PM	36,498	225	.3188	0	.3188	.3188
5:00 PM – 6:00 PM	34,015	250	.9107	0	.9107	.9107
5:00 PM – 6:00 PM	31,975	275	1.0535	0	1.0535	1.0535
5:00 PM – 6:00 PM	30,080	300	.1111	0	.1111	.1111
5:00 PM – 6:00 PM	28,308	325	1.4444	0	1.4444	1.4444
5:00 PM – 6:00 PM	26,644	350	1.2529	0	1.2529	1.2529
5:00 PM – 6:00 PM	25,074	375	1.6318	0	1.6318	1.6318
5:00 PM – 6:00 PM	23,586	400	.6528	0	.6528	.6528
5:00 PM – 6:00 PM	22,171	425	.2003	0	.2003	.2003
5:00 PM – 6:00 PM	20,823	450	.9099	0	.9099	.9099
5:00 PM – 6:00 PM	19,533	475	.7254	0	.7254	.7254
5:00 PM – 6:00 PM	18,298	500	.7521	0	.7521	.7521
5:00 PM – 6:00 PM	17,112	525	.2235	0	.2235	.2235
5:00 PM – 6:00 PM	15,970	550	.3175	0	.3175	.3175
5:00 PM – 6:00 PM	14,870	575	.9445	0	.9445	.9445
5:00 PM – 6:00 PM	13,808	600	1.7659	0	1.7659	1.7659
5:00 PM – 6:00 PM	12,781	625	.4087	0	.4087	.4087
5:00 PM – 6:00 PM	11,786	650	.4145	0	.4145	.4145
5:00 PM – 6:00 PM	10,823	675	.241	0	.241	.241
5:00 PM – 6:00 PM	9,888	700	.4326	0	.4326	.4326
5:00 PM – 6:00 PM	8,979	725	.5468	0	.5468	.5468
5:00 PM – 6:00 PM	8,095	750	.326	0	.326	.326
5:00 PM – 6:00 PM	7,235	775	.8393	0	.8393	.8393
5:00 PM – 6:00 PM	6,398	800	1.1193	0	1.1193	1.1193
5:00 PM – 6:00 PM	5,581	825	1.0322	0	1.0322	1.0322
5:00 PM – 6:00 PM	4,784	850	.2569	0	.2569	.2569
5:00 PM – 6:00 PM	4,005	875	.0014	0	.0014	.0014
5:00 PM – 6:00 PM	3,245	900	.6296	0	.6296	.6296
5:00 PM – 6:00 PM	2,501	925	.042	0	.042	.042
5:00 PM – 6:00 PM	1,774	950	.4417	0	.4417	.4417
5:00 PM – 6:00 PM	1,062	975	.0868	0	.0868	.0868
5:00 PM – 6:00 PM	364	1000	.5992	0	.5992	.5992
6:00 PM – 7:00 PM	52,947	100	3.9696	0	3.9696	3.9696
6:00 PM – 7:00 PM	48,448	125	5.2621	0	5.2621	5.2621
6:00 PM – 7:00 PM	44,073	150	1.5119	0	1.5119	1.5119
6:00 PM – 7:00 PM	41,074	175	1.7061	0	1.7061	1.7061
6:00 PM – 7:00 PM	38,623	200	5.1387	0	5.1387	5.1387
6:00 PM – 7:00 PM	36,498	225	2.6258	0	2.6258	2.6258
6:00 PM – 7:00 PM	34,015	250	4.398	0	4.398	4.398
6:00 PM – 7:00 PM	31,975	275	4.1861	0	4.1861	4.1861
6:00 PM – 7:00 PM	30,080	300	5.5008	0	5.5008	5.5008
6:00 PM – 7:00 PM	28,308	325	4.8192	0	4.8192	4.8192
6:00 PM – 7:00 PM	26,644	350	4.0637	0	4.0637	4.0637
6:00 PM – 7:00 PM	25,074	375	2.1695	0	2.1695	2.1695

6:00 PM – 7:00 PM	23,586	400	.0478	0	.0478	.0478
6:00 PM – 7:00 PM	22,171	425	.7768	0	.7768	.7768
6:00 PM – 7:00 PM	20,823	450	.3898	0	.3898	.3898
6:00 PM – 7:00 PM	19,533	475	.0934	0	.0934	.0934
6:00 PM – 7:00 PM	18,298	500	1.8123	0	1.8123	1.8123
6:00 PM – 7:00 PM	17,112	525	1.4906	0	1.4906	1.4906
6:00 PM – 7:00 PM	15,970	550	.4893	0	.4893	.4893
6:00 PM – 7:00 PM	14,870	575	.7888	0	.7888	.7888
6:00 PM – 7:00 PM	13,808	600	.2571	0	.2571	.2571
6:00 PM – 7:00 PM	12,781	625	.4412	0	.4412	.4412
6:00 PM – 7:00 PM	11,786	650	.7805	0	.7805	.7805
6:00 PM – 7:00 PM	10,823	675	.4374	0	.4374	.4374
6:00 PM – 7:00 PM	9,888	700	1.1927	0	1.1927	1.1927
6:00 PM – 7:00 PM	8,979	725	1.2869	0	1.2869	1.2869
6:00 PM – 7:00 PM	8,095	750	.1809	0	.1809	.1809
6:00 PM – 7:00 PM	7,235	775	1.3493	0	1.3493	1.3493
6:00 PM – 7:00 PM	6,398	800	1.2814	0	1.2814	1.2814
6:00 PM – 7:00 PM	5,581	825	.7819	0	.7819	.7819
6:00 PM – 7:00 PM	4,784	850	.8965	0	.8965	.8965
6:00 PM – 7:00 PM	4,005	875	.1248	0	.1248	.1248
6:00 PM – 7:00 PM	3,245	900	.7673	0	.7673	.7673
6:00 PM – 7:00 PM	2,501	925	.6916	0	.6916	.6916
6:00 PM – 7:00 PM	1,774	950	1.0188	0	1.0188	1.0188
6:00 PM – 7:00 PM	1,062	975	.3719	0	.3719	.3719
6:00 PM – 7:00 PM	364	1000	2.0921	0	2.0921	2.0921
7:00 PM – 8: 00 PM	52,947	100	4.8497	0	4.8497	4.8497
7:00 PM – 8: 00 PM	48,448	125	.8382	0	.8382	.8382
7:00 PM – 8: 00 PM	44,073	150	1.8016	0	1.8016	1.8016
7:00 PM – 8: 00 PM	41,074	175	2.2026	0	2.2026	2.2026
7:00 PM – 8: 00 PM	38,623	200	2.0747	0	2.0747	2.0747
7:00 PM – 8: 00 PM	36,498	225	.0366	0	.0366	.0366
7:00 PM – 8: 00 PM	34,015	250	1.1758	0	1.1758	1.1758
7:00 PM – 8: 00 PM	31,975	275	1.5474	0	1.5474	1.5474
7:00 PM – 8: 00 PM	30,080	300	2.4205	0	2.4205	2.4205
7:00 PM – 8: 00 PM	28,308	325	.6861	0	.6861	.6861
7:00 PM – 8: 00 PM	26,644	350	.4382	0	.4382	.4382
7:00 PM – 8: 00 PM	25,074	375	.4082	0	.4082	.4082
7:00 PM – 8: 00 PM	23,586	400	1.6424	0	1.6424	1.6424
7:00 PM – 8: 00 PM	22,171	425	.1992	0	.1992	.1992
7:00 PM – 8: 00 PM	20,823	450	1.1296	0	1.1296	1.1296
7:00 PM – 8: 00 PM	19,533	475	.1813	0	.1813	.1813
7:00 PM – 8: 00 PM	18,298	500	.6464	0	.6464	.6464
7:00 PM – 8: 00 PM	17,112	525	1.9665	0	1.9665	1.9665
7:00 PM – 8: 00 PM	15,970	550	.6018	0	.6018	.6018
7:00 PM – 8: 00 PM	14,870	575	.8083	0	.8083	.8083
7:00 PM – 8: 00 PM	13,808	600	1.0838	0	1.0838	1.0838
7:00 PM – 8: 00 PM	12,781	625	.7106	0	.7106	.7106
7:00 PM – 8: 00 PM	11,786	650	.6264	0	.6264	.6264
7:00 PM – 8: 00 PM	10,823	675	.1163	0	.1163	.1163
7:00 PM – 8: 00 PM	9,888	700	.1554	0	.1554	.1554
7:00 PM – 8: 00 PM	8,979	725	.8409	0	.8409	.8409
7:00 PM – 8: 00 PM	8,095	750	1.2017	0	1.2017	1.2017
7:00 PM – 8: 00 PM	7,235	775	1.1534	0	1.1534	1.1534

7:00 PM – 8: 00 PM	6,398	800	1.4494	0	1.4494	1.4494
7:00 PM – 8: 00 PM	5,581	825	1.4751	0	1.4751	1.4751
7:00 PM – 8: 00 PM	4,784	850	1.0541	0	1.0541	1.0541
7:00 PM – 8: 00 PM	4,005	875	.6282	0	.6282	.6282
7:00 PM – 8: 00 PM	3,245	900	.3734	0	.3734	.3734
7:00 PM – 8: 00 PM	2,501	925	.4085	0	.4085	.4085
7:00 PM – 8: 00 PM	1,774	950	.0994	0	.0994	.0994
7:00 PM – 8: 00 PM	1,062	975	.6252	0	.6252	.6252
7:00 PM – 8: 00 PM	364	1000	.8424	0	.8424	.8424
8:00 PM – 9:00 PM	52,947	100	1.4251	0	1.4251	1.4251
8:00 PM – 9:00 PM	48,448	125	1.0681	0	1.0681	1.0681
8:00 PM – 9:00 PM	44,073	150	.9222	0	.9222	.9222
8:00 PM – 9:00 PM	41,074	175	2.358	0	2.358	2.358
8:00 PM – 9:00 PM	38,623	200	2.4214	0	2.4214	2.4214
8:00 PM – 9:00 PM	36,498	225	1.6768	0	1.6768	1.6768
8:00 PM – 9:00 PM	34,015	250	1.9434	0	1.9434	1.9434
8:00 PM – 9:00 PM	31,975	275	5.3449	0	5.3449	5.3449
8:00 PM – 9:00 PM	30,080	300	6.1962	0	6.1962	6.1962
8:00 PM – 9:00 PM	28,308	325	5.3506	0	5.3506	5.3506
8:00 PM – 9:00 PM	26,644	350	4.1598	0	4.1598	4.1598
8:00 PM – 9:00 PM	25,074	375	2.389	0	2.389	2.389
8:00 PM – 9:00 PM	23,586	400	.3593	0	.3593	.3593
8:00 PM – 9:00 PM	22,171	425	1.03	0	1.03	1.03
8:00 PM – 9:00 PM	20,823	450	1.309	0	1.309	1.309
8:00 PM – 9:00 PM	19,533	475	.19	0	.19	.19
8:00 PM – 9:00 PM	18,298	500	.7905	0	.7905	.7905
8:00 PM – 9:00 PM	17,112	525	2.2365	0	2.2365	2.2365
8:00 PM – 9:00 PM	15,970	550	2.6344	0	2.6344	2.6344
8:00 PM – 9:00 PM	14,870	575	2.3953	0	2.3953	2.3953
8:00 PM – 9:00 PM	13,808	600	1.4729	0	1.4729	1.4729
8:00 PM – 9:00 PM	12,781	625	.1176	0	.1176	.1176
8:00 PM – 9:00 PM	11,786	650	.5487	0	.5487	.5487
8:00 PM – 9:00 PM	10,823	675	.7506	0	.7506	.7506
8:00 PM – 9:00 PM	9,888	700	.0476	0	.0476	.0476
8:00 PM – 9:00 PM	8,979	725	.1141	0	.1141	.1141
8:00 PM – 9:00 PM	8,095	750	.2546	0	.2546	.2546
8:00 PM – 9:00 PM	7,235	775	.2531	0	.2531	.2531
8:00 PM – 9:00 PM	6,398	800	.2876	0	.2876	.2876
8:00 PM – 9:00 PM	5,581	825	.2544	0	.2544	.2544
8:00 PM – 9:00 PM	4,784	850	.0247	0	.0247	.0247
8:00 PM – 9:00 PM	4,005	875	.3936	0	.3936	.3936
8:00 PM – 9:00 PM	3,245	900	.5179	0	.5179	.5179
8:00 PM – 9:00 PM	2,501	925	.4085	0	.4085	.4085
8:00 PM – 9:00 PM	1,774	950	.1567	0	.1567	.1567
8:00 PM – 9:00 PM	1,062	975	.3837	0	.3837	.3837
8:00 PM – 9:00 PM	364	1000	.635	0	.635	.635
9:00 PM – 10:00 PM	52,947	100	2.3259	0	2.3259	2.3259
9:00 PM – 10:00 PM	48,448	125	.3544	0	.3544	.3544
9:00 PM – 10:00 PM	44,073	150	3.7493	0	3.7493	3.7493
9:00 PM – 10:00 PM	41,074	175	1.5005	0	1.5005	1.5005
9:00 PM – 10:00 PM	38,623	200	1.703	0	1.703	1.703
9:00 PM – 10:00 PM	36,498	225	.6857	0	.6857	.6857
9:00 PM – 10:00 PM	34,015	250	.5917	0	.5917	.5917

9:00 PM – 10:00 PM	31,975	275	.3999	0	.3999	.3999
9:00 PM – 10:00 PM	30,080	300	.2101	0	.2101	.2101
9:00 PM – 10:00 PM	28,308	325	.4993	0	.4993	.4993
9:00 PM – 10:00 PM	26,644	350	.3992	0	.3992	.3992
9:00 PM – 10:00 PM	25,074	375	.9522	0	.9522	.9522
9:00 PM – 10:00 PM	23,586	400	1.554	0	1.554	1.554
9:00 PM – 10:00 PM	22,171	425	.5204	0	.5204	.5204
9:00 PM – 10:00 PM	20,823	450	1.3393	0	1.3393	1.3393
9:00 PM – 10:00 PM	19,533	475	1.8217	0	1.8217	1.8217
9:00 PM – 10:00 PM	18,298	500	1.5642	0	1.5642	1.5642
9:00 PM – 10:00 PM	17,112	525	1.4441	0	1.4441	1.4441
9:00 PM – 10:00 PM	15,970	550	.0722	0	.0722	.0722
9:00 PM – 10:00 PM	14,870	575	1.2281	0	1.2281	1.2281
9:00 PM – 10:00 PM	13,808	600	.1675	0	.1675	.1675
9:00 PM – 10:00 PM	12,781	625	.4222	0	.4222	.4222
9:00 PM – 10:00 PM	11,786	650	.6955	0	.6955	.6955
9:00 PM – 10:00 PM	10,823	675	.7333	0	.7333	.7333
9:00 PM – 10:00 PM	9,888	700	.3106	0	.3106	.3106
9:00 PM – 10:00 PM	8,979	725	.9687	0	.9687	.9687
9:00 PM – 10:00 PM	8,095	750	1.4364	0	1.4364	1.4364
9:00 PM – 10:00 PM	7,235	775	1.5498	0	1.5498	1.5498
9:00 PM – 10:00 PM	6,398	800	1.1523	0	1.1523	1.1523
9:00 PM – 10:00 PM	5,581	825	1.1642	0	1.1642	1.1642
9:00 PM – 10:00 PM	4,784	850	.7058	0	.7058	.7058
9:00 PM – 10:00 PM	4,005	875	1.9789	0	1.9789	1.9789
9:00 PM – 10:00 PM	3,245	900	2.1095	0	2.1095	2.1095
9:00 PM – 10:00 PM	2,501	925	1.9523	0	1.9523	1.9523
9:00 PM – 10:00 PM	1,774	950	1.2446	0	1.2446	1.2446
9:00 PM – 10:00 PM	1,062	975	1.4318	0	1.4318	1.4318
9:00 PM – 10:00 PM	364	1000	1.092	0	1.092	1.092
10:00 PM – 11:00 PM	52,947	100	1.6759	0	1.6759	1.6759
10:00 PM – 11:00 PM	48,448	125	1.4225	0	1.4225	1.4225
10:00 PM – 11:00 PM	44,073	150	.7262	0	.7262	.7262
10:00 PM – 11:00 PM	41,074	175	.7742	0	.7742	.7742
10:00 PM – 11:00 PM	38,623	200	3.9153	0	3.9153	3.9153
10:00 PM – 11:00 PM	36,498	225	3.0907	0	3.0907	3.0907
10:00 PM – 11:00 PM	34,015	250	3.6259	0	3.6259	3.6259
10:00 PM – 11:00 PM	31,975	275	2.1425	0	2.1425	2.1425
10:00 PM – 11:00 PM	30,080	300	1.7313	0	1.7313	1.7313
10:00 PM – 11:00 PM	28,308	325	1.4035	0	1.4035	1.4035
10:00 PM – 11:00 PM	26,644	350	1.6556	0	1.6556	1.6556
10:00 PM – 11:00 PM	25,074	375	2.1692	0	2.1692	2.1692
10:00 PM – 11:00 PM	23,586	400	1.3993	0	1.3993	1.3993
10:00 PM – 11:00 PM	22,171	425	.0488	0	.0488	.0488
10:00 PM – 11:00 PM	20,823	450	.3096	0	.3096	.3096
10:00 PM – 11:00 PM	19,533	475	1.0338	0	1.0338	1.0338
10:00 PM – 11:00 PM	18,298	500	.9587	0	.9587	.9587
10:00 PM – 11:00 PM	17,112	525	1.4144	0	1.4144	1.4144
10:00 PM – 11:00 PM	15,970	550	1.2678	0	1.2678	1.2678
10:00 PM – 11:00 PM	14,870	575	1.4484	0	1.4484	1.4484
10:00 PM – 11:00 PM	13,808	600	.2414	0	.2414	.2414
10:00 PM – 11:00 PM	12,781	625	.1554	0	.1554	.1554
10:00 PM – 11:00 PM	11,786	650	.5697	0	.5697	.5697

10:00 PM – 11:00 PM	10,823	675	.4933	0	.4933	.4933
10:00 PM – 11:00 PM	9,888	700	.2036	0	.2036	.2036
10:00 PM – 11:00 PM	8,979	725	.5963	0	.5963	.5963
10:00 PM – 11:00 PM	8,095	750	.6706	0	.6706	.6706
10:00 PM – 11:00 PM	7,235	775	.0342	0	.0342	.0342
10:00 PM – 11:00 PM	6,398	800	.1531	0	.1531	.1531
10:00 PM – 11:00 PM	5,581	825	.1001	0	.1001	.1001
10:00 PM – 11:00 PM	4,784	850	3.264	0	3.264	3.264
10:00 PM – 11:00 PM	4,005	875	4.6622	0	4.6622	4.6622
10:00 PM – 11:00 PM	3,245	900	4.1642	0	4.1642	4.1642
10:00 PM – 11:00 PM	2,501	925	2.3881	0	2.3881	2.3881
10:00 PM – 11:00 PM	1,774	950	1.0888	0	1.0888	1.0888
10:00 PM – 11:00 PM	1,062	975	1.0358	0	1.0358	1.0358
10:00 PM – 11:00 PM	364	1000	1.2348	0	1.2348	1.2348
11:00 PM – 12:00 AM	52,947	100	3.1751	0	3.1751	3.1751
11:00 PM – 12:00 AM	48,448	125	1.0081	0	1.0081	1.0081
11:00 PM – 12:00 AM	44,073	150	.4828	0	.4828	.4828
11:00 PM – 12:00 AM	41,074	175	.4907	0	.4907	.4907
11:00 PM – 12:00 AM	38,623	200	2.3508	0	2.3508	2.3508
11:00 PM – 12:00 AM	36,498	225	1.7878	0	1.7878	1.7878
11:00 PM – 12:00 AM	34,015	250	1.0914	0	1.0914	1.0914
11:00 PM – 12:00 AM	31,975	275	.1352	0	.1352	.1352
11:00 PM – 12:00 AM	30,080	300	.3441	0	.3441	.3441
11:00 PM – 12:00 AM	28,308	325	.3473	0	.3473	.3473
11:00 PM – 12:00 AM	26,644	350	1.3247	0	1.3247	1.3247
11:00 PM – 12:00 AM	25,074	375	1.8498	0	1.8498	1.8498
11:00 PM – 12:00 AM	23,586	400	1.0779	0	1.0779	1.0779
11:00 PM – 12:00 AM	22,171	425	.3184	0	.3184	.3184
11:00 PM – 12:00 AM	20,823	450	.3387	0	.3387	.3387
11:00 PM – 12:00 AM	19,533	475	.5384	0	.5384	.5384
11:00 PM – 12:00 AM	18,298	500	1.2085	0	1.2085	1.2085
11:00 PM – 12:00 AM	17,112	525	.5508	0	.5508	.5508
11:00 PM – 12:00 AM	15,970	550	.2797	0	.2797	.2797
11:00 PM – 12:00 AM	14,870	575	.2393	0	.2393	.2393
11:00 PM – 12:00 AM	13,808	600	.0177	0	.0177	.0177
11:00 PM – 12:00 AM	12,781	625	.1896	0	.1896	.1896
11:00 PM – 12:00 AM	11,786	650	.267	0	.267	.267
11:00 PM – 12:00 AM	10,823	675	0	0	0	0
11:00 PM – 12:00 AM	9,888	700	0	0	0	0
11:00 PM – 12:00 AM	8,979	725	.4934	0	.4934	.4934
11:00 PM – 12:00 AM	8,095	750	.66	0	.66	.66
11:00 PM – 12:00 AM	7,235	775	.2949	0	.2949	.2949
11:00 PM – 12:00 AM	6,398	800	.4099	0	.4099	.4099
11:00 PM – 12:00 AM	5,581	825	.6324	0	.6324	.6324
11:00 PM – 12:00 AM	4,784	850	.9724	0	.9724	.9724
11:00 PM – 12:00 AM	4,005	875	.6817	0	.6817	.6817
11:00 PM – 12:00 AM	3,245	900	.7246	0	.7246	.7246
11:00 PM – 12:00 AM	2,501	925	.7728	0	.7728	.7728
11:00 PM – 12:00 AM	1,774	950	2.6425	0	2.6425	2.6425
11:00 PM – 12:00 AM	1,062	975	2.1965	0	2.1965	2.1965
11:00 PM – 12:00 AM	364	1000	1.1813	0	1.1813	1.1813

Table B-4: Statistical Results for Wind Direction Deviation Values Grouped by Altitude and Hour for 5/27/99

The table shown below displays the statistical results for wind direction deviations grouped first by altitude then by hour for May 27, 1999 for the time span of 9:00 AM until 1:00 AM.

Comparison Hour on 5/27/99	Altitude (ft)	Pressure (Mb)	Average Deviation (degrees)	Standard Deviation (degrees)	Max. Deviation (degrees)	Min. Deviation (degrees)
9:00 AM – 10:00 AM	52,947	100	.6102	0	.6102	.6102
9:00 AM – 10:00 AM	48,448	125	.3367	0	.3367	.3367
9:00 AM – 10:00 AM	44,073	150	.8363	0	.8363	.8363
9:00 AM – 10:00 AM	41,074	175	3.118	0	3.118	3.118
9:00 AM – 10:00 AM	38,623	200	.406	0	.406	.406
9:00 AM – 10:00 AM	36,498	225	1.111	0	1.111	1.111
9:00 AM – 10:00 AM	34,015	250	1.8413	0	1.8413	1.8413
9:00 AM – 10:00 AM	31,975	275	.1399	0	.1399	.1399
9:00 AM – 10:00 AM	30,080	300	.3176	0	.3176	.3176
9:00 AM – 10:00 AM	28,308	325	.8166	0	.8166	.8166
9:00 AM – 10:00 AM	26,644	350	2.2266	0	2.2266	2.2266
9:00 AM – 10:00 AM	25,074	375	1.927	0	1.927	1.927
9:00 AM – 10:00 AM	23,586	400	3.3413	0	3.3413	3.3413
9:00 AM – 10:00 AM	22,171	425	1.8098	0	1.8098	1.8098
9:00 AM – 10:00 AM	20,823	450	.5272	0	.5272	.5272
9:00 AM – 10:00 AM	19,533	475	.1275	0	.1275	.1275
9:00 AM – 10:00 AM	18,298	500	.3589	0	.3589	.3589
9:00 AM – 10:00 AM	17,112	525	.4942	0	.4942	.4942
9:00 AM – 10:00 AM	15,970	550	.6747	0	.6747	.6747
9:00 AM – 10:00 AM	14,870	575	.8629	0	.8629	.8629
9:00 AM – 10:00 AM	13,808	600	.4625	0	.4625	.4625
9:00 AM – 10:00 AM	12,781	625	1.4578	0	1.4578	1.4578
9:00 AM – 10:00 AM	11,786	650	1.6169	0	1.6169	1.6169
9:00 AM – 10:00 AM	10,823	675	1.7849	0	1.7849	1.7849
9:00 AM – 10:00 AM	9,888	700	1.7149	0	1.7149	1.7149
9:00 AM – 10:00 AM	8,979	725	2.2646	0	2.2646	2.2646
9:00 AM – 10:00 AM	8,095	750	2.9734	0	2.9734	2.9734
9:00 AM – 10:00 AM	7,235	775	2.0632	0	2.0632	2.0632
9:00 AM – 10:00 AM	6,398	800	1.8171	0	1.8171	1.8171
9:00 AM – 10:00 AM	5,581	825	.5421	0	.5421	.5421
9:00 AM – 10:00 AM	4,784	850	.3888	0	.3888	.3888
9:00 AM – 10:00 AM	4,005	875	.7858	0	.7858	.7858
9:00 AM – 10:00 AM	3,245	900	1.9495	0	1.9495	1.9495
9:00 AM – 10:00 AM	2,501	925	.1942	0	.1942	.1942
9:00 AM – 10:00 AM	1,774	950	3.5641	0	3.5641	3.5641
9:00 AM – 10:00 AM	1,062	975	1.6686	0	1.6686	1.6686
9:00 AM – 10:00 AM	364	1000	2.3924	0	2.3924	2.3924
10:00 AM – 11:00 AM	52,947	100	5.8501	0	5.8501	5.8501
10:00 AM – 11:00 AM	48,448	125	.3274	0	.3274	.3274
10:00 AM – 11:00 AM	44,073	150	1.7105	0	1.7105	1.7105
10:00 AM – 11:00 AM	41,074	175	2.6976	0	2.6976	2.6976
10:00 AM – 11:00 AM	38,623	200	1.5285	0	1.5285	1.5285
10:00 AM – 11:00 AM	36,498	225	2.4782	0	2.4782	2.4782

10:00 AM – 11:00 AM	34,015	250	.7166	0	.7166	.7166
10:00 AM – 11:00 AM	31,975	275	.5832	0	.5832	.5832
10:00 AM – 11:00 AM	30,080	300	.7036	0	.7036	.7036
10:00 AM – 11:00 AM	28,308	325	.9436	0	.9436	.9436
10:00 AM – 11:00 AM	26,644	350	.0333	0	.0333	.0333
10:00 AM – 11:00 AM	25,074	375	.1559	0	.1559	.1559
10:00 AM – 11:00 AM	23,586	400	.9866	0	.9866	.9866
10:00 AM – 11:00 AM	22,171	425	2.4789	0	2.4789	2.4789
10:00 AM – 11:00 AM	20,823	450	4.4871	0	4.4871	4.4871
10:00 AM – 11:00 AM	19,533	475	2.575	0	2.575	2.575
10:00 AM – 11:00 AM	18,298	500	.1492	0	.1492	.1492
10:00 AM – 11:00 AM	17,112	525	.4942	0	.4942	.4942
10:00 AM – 11:00 AM	15,970	550	.6699	0	.6699	.6699
10:00 AM – 11:00 AM	14,870	575	.7947	0	.7947	.7947
10:00 AM – 11:00 AM	13,808	600	.1718	0	.1718	.1718
10:00 AM – 11:00 AM	12,781	625	.4229	0	.4229	.4229
10:00 AM – 11:00 AM	11,786	650	.1036	0	.1036	.1036
10:00 AM – 11:00 AM	10,823	675	.2574	0	.2574	.2574
10:00 AM – 11:00 AM	9,888	700	.6492	0	.6492	.6492
10:00 AM – 11:00 AM	8,979	725	.2657	0	.2657	.2657
10:00 AM – 11:00 AM	8,095	750	.6854	0	.6854	.6854
10:00 AM – 11:00 AM	7,235	775	.0278	0	.0278	.0278
10:00 AM – 11:00 AM	6,398	800	.6934	0	.6934	.6934
10:00 AM – 11:00 AM	5,581	825	.5138	0	.5138	.5138
10:00 AM – 11:00 AM	4,784	850	.5322	0	.5322	.5322
10:00 AM – 11:00 AM	4,005	875	.5412	0	.5412	.5412
10:00 AM – 11:00 AM	3,245	900	.4896	0	.4896	.4896
10:00 AM – 11:00 AM	2,501	925	2.1698	0	2.1698	2.1698
10:00 AM – 11:00 AM	1,774	950	.3252	0	.3252	.3252
10:00 AM – 11:00 AM	1,062	975	1.1008	0	1.1008	1.1008
10:00 AM – 11:00 AM	364	1000	2.3985	0	2.3985	2.3985
11:00 AM – 12:00 PM	52,947	100	7.7024	0	7.7024	7.7024
11:00 AM – 12:00 PM	48,448	125	.6682	0	.6682	.6682
11:00 AM – 12:00 PM	44,073	150	.5558	0	.5558	.5558
11:00 AM – 12:00 PM	41,074	175	1.5444	0	1.5444	1.5444
11:00 AM – 12:00 PM	38,623	200	.1806	0	.1806	.1806
11:00 AM – 12:00 PM	36,498	225	1.7301	0	1.7301	1.7301
11:00 AM – 12:00 PM	34,015	250	2.1165	0	2.1165	2.1165
11:00 AM – 12:00 PM	31,975	275	2.5001	0	2.5001	2.5001
11:00 AM – 12:00 PM	30,080	300	1.5736	0	1.5736	1.5736
11:00 AM – 12:00 PM	28,308	325	.4299	0	.4299	.4299
11:00 AM – 12:00 PM	26,644	350	.0333	0	.0333	.0333
11:00 AM – 12:00 PM	25,074	375	1.3212	0	1.3212	1.3212
11:00 AM – 12:00 PM	23,586	400	1.1945	0	1.1945	1.1945
11:00 AM – 12:00 PM	22,171	425	.5016	0	.5016	.5016
11:00 AM – 12:00 PM	20,823	450	2.0454	0	2.0454	2.0454
11:00 AM – 12:00 PM	19,533	475	2.4092	0	2.4092	2.4092
11:00 AM – 12:00 PM	18,298	500	.5523	0	.5523	.5523
11:00 AM – 12:00 PM	17,112	525	1.4292	0	1.4292	1.4292
11:00 AM – 12:00 PM	15,970	550	.9905	0	.9905	.9905
11:00 AM – 12:00 PM	14,870	575	.2344	0	.2344	.2344
11:00 AM – 12:00 PM	13,808	600	.8303	0	.8303	.8303
11:00 AM – 12:00 PM	12,781	625	1.9015	0	1.9015	1.9015

11:00 AM – 12:00 PM	11,786	650	3.027	0	3.027	3.027
11:00 AM – 12:00 PM	10,823	675	4.0143	0	4.0143	4.0143
11:00 AM – 12:00 PM	9,888	700	3.2123	0	3.2123	3.2123
11:00 AM – 12:00 PM	8,979	725	1.2609	0	1.2609	1.2609
11:00 AM – 12:00 PM	8,095	750	1.359	0	1.359	1.359
11:00 AM – 12:00 PM	7,235	775	1.3426	0	1.3426	1.3426
11:00 AM – 12:00 PM	6,398	800	2.1748	0	2.1748	2.1748
11:00 AM – 12:00 PM	5,581	825	.7126	0	.7126	.7126
11:00 AM – 12:00 PM	4,784	850	1.2356	0	1.2356	1.2356
11:00 AM – 12:00 PM	4,005	875	.8633	0	.8633	.8633
11:00 AM – 12:00 PM	3,245	900	.586	0	.586	.586
11:00 AM – 12:00 PM	2,501	925	.4364	0	.4364	.4364
11:00 AM – 12:00 PM	1,774	950	.1662	0	.1662	.1662
11:00 AM – 12:00 PM	1,062	975	3.6388	0	3.6388	3.6388
11:00 AM – 12:00 PM	364	1000	.914	0	.914	.914
12:00 PM – 1:00 PM	52,947	100	4.7946	0	4.7946	4.7946
12:00 PM – 1:00 PM	48,448	125	1.0351	0	1.0351	1.0351
12:00 PM – 1:00 PM	44,073	150	.2615	0	.2615	.2615
12:00 PM – 1:00 PM	41,074	175	1.4953	0	1.4953	1.4953
12:00 PM – 1:00 PM	38,623	200	1.2099	0	1.2099	1.2099
12:00 PM – 1:00 PM	36,498	225	.1769	0	.1769	.1769
12:00 PM – 1:00 PM	34,015	250	.8596	0	.8596	.8596
12:00 PM – 1:00 PM	31,975	275	1.4207	0	1.4207	1.4207
12:00 PM – 1:00 PM	30,080	300	1.96	0	1.96	1.96
12:00 PM – 1:00 PM	28,308	325	.5344	0	.5344	.5344
12:00 PM – 1:00 PM	26,644	350	.8613	0	.8613	.8613
12:00 PM – 1:00 PM	25,074	375	1.5219	0	1.5219	1.5219
12:00 PM – 1:00 PM	23,586	400	2.6172	0	2.6172	2.6172
12:00 PM – 1:00 PM	22,171	425	1.4926	0	1.4926	1.4926
12:00 PM – 1:00 PM	20,823	450	.4696	0	.4696	.4696
12:00 PM – 1:00 PM	19,533	475	.3352	0	.3352	.3352
12:00 PM – 1:00 PM	18,298	500	.0587	0	.0587	.0587
12:00 PM – 1:00 PM	17,112	525	.0706	0	.0706	.0706
12:00 PM – 1:00 PM	15,970	550	.2933	0	.2933	.2933
12:00 PM – 1:00 PM	14,870	575	.6383	0	.6383	.6383
12:00 PM – 1:00 PM	13,808	600	.5821	0	.5821	.5821
12:00 PM – 1:00 PM	12,781	625	.2567	0	.2567	.2567
12:00 PM – 1:00 PM	11,786	650	.7538	0	.7538	.7538
12:00 PM – 1:00 PM	10,823	675	1.4847	0	1.4847	1.4847
12:00 PM – 1:00 PM	9,888	700	.4281	0	.4281	.4281
12:00 PM – 1:00 PM	8,979	725	.4552	0	.4552	.4552
12:00 PM – 1:00 PM	8,095	750	.6241	0	.6241	.6241
12:00 PM – 1:00 PM	7,235	775	.4681	0	.4681	.4681
12:00 PM – 1:00 PM	6,398	800	2.2262	0	2.2262	2.2262
12:00 PM – 1:00 PM	5,581	825	2.2633	0	2.2633	2.2633
12:00 PM – 1:00 PM	4,784	850	1.4889	0	1.4889	1.4889
12:00 PM – 1:00 PM	4,005	875	2.4031	0	2.4031	2.4031
12:00 PM – 1:00 PM	3,245	900	1.4741	0	1.4741	1.4741
12:00 PM – 1:00 PM	2,501	925	3.8141	0	3.8141	3.8141
12:00 PM – 1:00 PM	1,774	950	1.3634	0	1.3634	1.3634
12:00 PM – 1:00 PM	1,062	975	2.2142	0	2.2142	2.2142
12:00 PM – 1:00 PM	364	1000	3.1604	0	3.1604	3.1604
1:00 PM – 2:00 PM	52,947	100	1.085	0	1.085	1.085

1:00 PM – 2:00 PM	48,448	125	1.3705	0	1.3705	1.3705
1:00 PM – 2:00 PM	44,073	150	1.3872	0	1.3872	1.3872
1:00 PM – 2:00 PM	41,074	175	1.692	0	1.692	1.692
1:00 PM – 2:00 PM	38,623	200	1.4761	0	1.4761	1.4761
1:00 PM – 2:00 PM	36,498	225	1.4767	0	1.4767	1.4767
1:00 PM – 2:00 PM	34,015	250	1.1068	0	1.1068	1.1068
1:00 PM – 2:00 PM	31,975	275	.3266	0	.3266	.3266
1:00 PM – 2:00 PM	30,080	300	.004	0	.004	.004
1:00 PM – 2:00 PM	28,308	325	.1278	0	.1278	.1278
1:00 PM – 2:00 PM	26,644	350	.3883	0	.3883	.3883
1:00 PM – 2:00 PM	25,074	375	.3222	0	.3222	.3222
1:00 PM – 2:00 PM	23,586	400	.8428	0	.8428	.8428
1:00 PM – 2:00 PM	22,171	425	1.8387	0	1.8387	1.8387
1:00 PM – 2:00 PM	20,823	450	2.862	0	2.862	2.862
1:00 PM – 2:00 PM	19,533	475	5.5151	0	5.5151	5.5151
1:00 PM – 2:00 PM	18,298	500	4.1895	0	4.1895	4.1895
1:00 PM – 2:00 PM	17,112	525	3.2254	0	3.2254	3.2254
1:00 PM – 2:00 PM	15,970	550	4.7529	0	4.7529	4.7529
1:00 PM – 2:00 PM	14,870	575	4.4637	0	4.4637	4.4637
1:00 PM – 2:00 PM	13,808	600	.4957	0	.4957	.4957
1:00 PM – 2:00 PM	12,781	625	1.7764	0	1.7764	1.7764
1:00 PM – 2:00 PM	11,786	650	3.6599	0	3.6599	3.6599
1:00 PM – 2:00 PM	10,823	675	4.6382	0	4.6382	4.6382
1:00 PM – 2:00 PM	9,888	700	4.9305	0	4.9305	4.9305
1:00 PM – 2:00 PM	8,979	725	.1176	0	.1176	.1176
1:00 PM – 2:00 PM	8,095	750	.5325	0	.5325	.5325
1:00 PM – 2:00 PM	7,235	775	.3755	0	.3755	.3755
1:00 PM – 2:00 PM	6,398	800	3.5803	0	3.5803	3.5803
1:00 PM – 2:00 PM	5,581	825	.323	0	.323	.323
1:00 PM – 2:00 PM	4,784	850	.4745	0	.4745	.4745
1:00 PM – 2:00 PM	4,005	875	.2342	0	.2342	.2342
1:00 PM – 2:00 PM	3,245	900	1.3258	0	1.3258	1.3258
1:00 PM – 2:00 PM	2,501	925	.3451	0	.3451	.3451
1:00 PM – 2:00 PM	1,774	950	1.5296	0	1.5296	1.5296
1:00 PM – 2:00 PM	1,062	975	.4324	0	.4324	.4324
1:00 PM – 2:00 PM	364	1000	2.3567	0	2.3567	2.3567
2:00 PM – 3:00 PM	52,947	100	11.1323	0	11.1323	11.1323
2:00 PM – 3:00 PM	48,448	125	1.8011	0	1.8011	1.8011
2:00 PM – 3:00 PM	44,073	150	2.9082	0	2.9082	2.9082
2:00 PM – 3:00 PM	41,074	175	3.1589	0	3.1589	3.1589
2:00 PM – 3:00 PM	38,623	200	2.4155	0	2.4155	2.4155
2:00 PM – 3:00 PM	36,498	225	.1175	0	.1175	.1175
2:00 PM – 3:00 PM	34,015	250	1.8686	0	1.8686	1.8686
2:00 PM – 3:00 PM	31,975	275	.8044	0	.8044	.8044
2:00 PM – 3:00 PM	30,080	300	1.3002	0	1.3002	1.3002
2:00 PM – 3:00 PM	28,308	325	.0883	0	.0883	.0883
2:00 PM – 3:00 PM	26,644	350	.3873	0	.3873	.3873
2:00 PM – 3:00 PM	25,074	375	.5401	0	.5401	.5401
2:00 PM – 3:00 PM	23,586	400	.8643	0	.8643	.8643
2:00 PM – 3:00 PM	22,171	425	.309	0	.309	.309
2:00 PM – 3:00 PM	20,823	450	1.6075	0	1.6075	1.6075
2:00 PM – 3:00 PM	19,533	475	2.0495	0	2.0495	2.0495
2:00 PM – 3:00 PM	18,298	500	1.5992	0	1.5992	1.5992

2:00 PM – 3:00 PM	17,112	525	.9207	0	.9207	.9207
2:00 PM – 3:00 PM	15,970	550	.7495	0	.7495	.7495
2:00 PM – 3:00 PM	14,870	575	.4226	0	.4226	.4226
2:00 PM – 3:00 PM	13,808	600	1.486	0	1.486	1.486
2:00 PM – 3:00 PM	12,781	625	1.1654	0	1.1654	1.1654
2:00 PM – 3:00 PM	11,786	650	4.1139	0	4.1139	4.1139
2:00 PM – 3:00 PM	10,823	675	1.8996	0	1.8996	1.8996
2:00 PM – 3:00 PM	9,888	700	3.3096	0	3.3096	3.3096
2:00 PM – 3:00 PM	8,979	725	1.9208	0	1.9208	1.9208
2:00 PM – 3:00 PM	8,095	750	1.9437	0	1.9437	1.9437
2:00 PM – 3:00 PM	7,235	775	1.5551	0	1.5551	1.5551
2:00 PM – 3:00 PM	6,398	800	2.3946	0	2.3946	2.3946
2:00 PM – 3:00 PM	5,581	825	.1664	0	.1664	.1664
2:00 PM – 3:00 PM	4,784	850	.2924	0	.2924	.2924
2:00 PM – 3:00 PM	4,005	875	2.4788	0	2.4788	2.4788
2:00 PM – 3:00 PM	3,245	900	1.7847	0	1.7847	1.7847
2:00 PM – 3:00 PM	2,501	925	1.4658	0	1.4658	1.4658
2:00 PM – 3:00 PM	1,774	950	2.1213	0	2.1213	2.1213
2:00 PM – 3:00 PM	1,062	975	.7958	0	.7958	.7958
2:00 PM – 3:00 PM	364	1000	1.649	0	1.649	1.649
3:00 PM – 4:00 PM	52,947	100	14.3492	0	14.3492	14.3492
3:00 PM – 4:00 PM	48,448	125	1.958	0	1.958	1.958
3:00 PM – 4:00 PM	44,073	150	1.7197	0	1.7197	1.7197
3:00 PM – 4:00 PM	41,074	175	2.0528	0	2.0528	2.0528
3:00 PM – 4:00 PM	38,623	200	1.3599	0	1.3599	1.3599
3:00 PM – 4:00 PM	36,498	225	.7389	0	.7389	.7389
3:00 PM – 4:00 PM	34,015	250	.3777	0	.3777	.3777
3:00 PM – 4:00 PM	31,975	275	2.2458	0	2.2458	2.2458
3:00 PM – 4:00 PM	30,080	300	.651	0	.651	.651
3:00 PM – 4:00 PM	28,308	325	.3299	0	.3299	.3299
3:00 PM – 4:00 PM	26,644	350	.48	0	.48	.48
3:00 PM – 4:00 PM	25,074	375	.3855	0	.3855	.3855
3:00 PM – 4:00 PM	23,586	400	1.5773	0	1.5773	1.5773
3:00 PM – 4:00 PM	22,171	425	1.233	0	1.233	1.233
3:00 PM – 4:00 PM	20,823	450	2.8345	0	2.8345	2.8345
3:00 PM – 4:00 PM	19,533	475	2.0411	0	2.0411	2.0411
3:00 PM – 4:00 PM	18,298	500	2.0457	0	2.0457	2.0457
3:00 PM – 4:00 PM	17,112	525	1.121	0	1.121	1.121
3:00 PM – 4:00 PM	15,970	550	1.146	0	1.146	1.146
3:00 PM – 4:00 PM	14,870	575	.6269	0	.6269	.6269
3:00 PM – 4:00 PM	13,808	600	.9537	0	.9537	.9537
3:00 PM – 4:00 PM	12,781	625	2.1131	0	2.1131	2.1131
3:00 PM – 4:00 PM	11,786	650	.4065	0	.4065	.4065
3:00 PM – 4:00 PM	10,823	675	.1053	0	.1053	.1053
3:00 PM – 4:00 PM	9,888	700	.9997	0	.9997	.9997
3:00 PM – 4:00 PM	8,979	725	1.0256	0	1.0256	1.0256
3:00 PM – 4:00 PM	8,095	750	.8767	0	.8767	.8767
3:00 PM – 4:00 PM	7,235	775	.2254	0	.2254	.2254
3:00 PM – 4:00 PM	6,398	800	4.6522	0	4.6522	4.6522
3:00 PM – 4:00 PM	5,581	825	2.7478	0	2.7478	2.7478
3:00 PM – 4:00 PM	4,784	850	2.1394	0	2.1394	2.1394
3:00 PM – 4:00 PM	4,005	875	.7675	0	.7675	.7675
3:00 PM – 4:00 PM	3,245	900	2.0652	0	2.0652	2.0652

3:00 PM – 4:00 PM	2,501	925	1.6411	0	1.6411	1.6411
3:00 PM – 4:00 PM	1,774	950	.7733	0	.7733	.7733
3:00 PM – 4:00 PM	1,062	975	.888	0	.888	.888
3:00 PM – 4:00 PM	364	1000	1.042	0	1.042	1.042
4:00 PM – 5:00 PM	No data					
5:00 PM – 6:00 PM	No data					
6:00 PM – 7:00 PM	52,947	100	4.6433	0	4.6433	4.6433
6:00 PM – 7:00 PM	48,448	125	.0166	0	.0166	.0166
6:00 PM – 7:00 PM	44,073	150	1.5518	0	1.5518	1.5518
6:00 PM – 7:00 PM	41,074	175	3.7093	0	3.7093	3.7093
6:00 PM – 7:00 PM	38,623	200	2.0866	0	2.0866	2.0866
6:00 PM – 7:00 PM	36,498	225	4.2506	0	4.2506	4.2506
6:00 PM – 7:00 PM	34,015	250	.9474	0	.9474	.9474
6:00 PM – 7:00 PM	31,975	275	1.4067	0	1.4067	1.4067
6:00 PM – 7:00 PM	30,080	300	1.2525	0	1.2525	1.2525
6:00 PM – 7:00 PM	28,308	325	3.7971	0	3.7971	3.7971
6:00 PM – 7:00 PM	26,644	350	3.2856	0	3.2856	3.2856
6:00 PM – 7:00 PM	25,074	375	2.934	0	2.934	2.934
6:00 PM – 7:00 PM	23,586	400	1.014	0	1.014	1.014
6:00 PM – 7:00 PM	22,171	425	2.381	0	2.381	2.381
6:00 PM – 7:00 PM	20,823	450	1.2407	0	1.2407	1.2407
6:00 PM – 7:00 PM	19,533	475	1.2214	0	1.2214	1.2214
6:00 PM – 7:00 PM	18,298	500	1.5402	0	1.5402	1.5402
6:00 PM – 7:00 PM	17,112	525	1.8237	0	1.8237	1.8237
6:00 PM – 7:00 PM	15,970	550	1.6668	0	1.6668	1.6668
6:00 PM – 7:00 PM	14,870	575	1.302	0	1.302	1.302
6:00 PM – 7:00 PM	13,808	600	1.6806	0	1.6806	1.6806
6:00 PM – 7:00 PM	12,781	625	.1536	0	.1536	.1536
6:00 PM – 7:00 PM	11,786	650	.1765	0	.1765	.1765
6:00 PM – 7:00 PM	10,823	675	.2406	0	.2406	.2406
6:00 PM – 7:00 PM	9,888	700	.3929	0	.3929	.3929
6:00 PM – 7:00 PM	8,979	725	.4234	0	.4234	.4234
6:00 PM – 7:00 PM	8,095	750	1.9626	0	1.9626	1.9626
6:00 PM – 7:00 PM	7,235	775	1.2655	0	1.2655	1.2655
6:00 PM – 7:00 PM	6,398	800	1.2393	0	1.2393	1.2393
6:00 PM – 7:00 PM	5,581	825	.1063	0	.1063	.1063
6:00 PM – 7:00 PM	4,784	850	.6932	0	.6932	.6932
6:00 PM – 7:00 PM	4,005	875	1.6784	0	1.6784	1.6784
6:00 PM – 7:00 PM	3,245	900	2.6597	0	2.6597	2.6597
6:00 PM – 7:00 PM	2,501	925	2.3687	0	2.3687	2.3687
6:00 PM – 7:00 PM	1,774	950	.6751	0	.6751	.6751
6:00 PM – 7:00 PM	1,062	975	.1225	0	.1225	.1225
6:00 PM – 7:00 PM	364	1000	1.4972	0	1.4972	1.4972
7:00 PM – 8:00 PM	52,947	100	3.1064	0	3.1064	3.1064
7:00 PM – 8:00 PM	48,448	125	2.0759	0	2.0759	2.0759
7:00 PM – 8:00 PM	44,073	150	3.9894	0	3.9894	3.9894
7:00 PM – 8:00 PM	41,074	175	2.873	0	2.873	2.873
7:00 PM – 8:00 PM	38,623	200	1.5623	0	1.5623	1.5623
7:00 PM – 8:00 PM	36,498	225	.2821	0	.2821	.2821
7:00 PM – 8:00 PM	34,015	250	.8475	0	.8475	.8475
7:00 PM – 8:00 PM	31,975	275	.9976	0	.9976	.9976
7:00 PM – 8:00 PM	30,080	300	.7795	0	.7795	.7795
7:00 PM – 8:00 PM	28,308	325	.7193	0	.7193	.7193

7:00 PM – 8:00 PM	26,644	350	1.7516	0	1.7516	1.7516
7:00 PM – 8:00 PM	25,074	375	1.2902	0	1.2902	1.2902
7:00 PM – 8:00 PM	23,586	400	.0619	0	.0619	.0619
7:00 PM – 8:00 PM	22,171	425	.2017	0	.2017	.2017
7:00 PM – 8:00 PM	20,823	450	1.3639	0	1.3639	1.3639
7:00 PM – 8:00 PM	19,533	475	.9431	0	.9431	.9431
7:00 PM – 8:00 PM	18,298	500	.0714	0	.0714	.0714
7:00 PM – 8:00 PM	17,112	525	.234	0	.234	.234
7:00 PM – 8:00 PM	15,970	550	0	0	0	0
7:00 PM – 8:00 PM	14,870	575	.799	0	.799	.799
7:00 PM – 8:00 PM	13,808	600	1.1235	0	1.1235	1.1235
7:00 PM – 8:00 PM	12,781	625	2.1996	0	2.1996	2.1996
7:00 PM – 8:00 PM	11,786	650	2.1068	0	2.1068	2.1068
7:00 PM – 8:00 PM	10,823	675	1.6926	0	1.6926	1.6926
7:00 PM – 8:00 PM	9,888	700	.927	0	.927	.927
7:00 PM – 8:00 PM	8,979	725	.8385	0	.8385	.8385
7:00 PM – 8:00 PM	8,095	750	1.7692	0	1.7692	1.7692
7:00 PM – 8:00 PM	7,235	775	1.6203	0	1.6203	1.6203
7:00 PM – 8:00 PM	6,398	800	1.7262	0	1.7262	1.7262
7:00 PM – 8:00 PM	5,581	825	4.5989	0	4.5989	4.5989
7:00 PM – 8:00 PM	4,784	850	.9172	0	.9172	.9172
7:00 PM – 8:00 PM	4,005	875	.874	0	.874	.874
7:00 PM – 8:00 PM	3,245	900	.7606	0	.7606	.7606
7:00 PM – 8:00 PM	2,501	925	1.0447	0	1.0447	1.0447
7:00 PM – 8:00 PM	1,774	950	1.0249	0	1.0249	1.0249
7:00 PM – 8:00 PM	1,062	975	2.271	0	2.271	2.271
7:00 PM – 8:00 PM	364	1000	1.6435	0	1.6435	1.6435
8:00 PM – 9:00 PM	52,947	100	3.2667	0	3.2667	3.2667
8:00 PM – 9:00 PM	48,448	125	1.1061	0	1.1061	1.1061
8:00 PM – 9:00 PM	44,073	150	.1059	0	.1059	.1059
8:00 PM – 9:00 PM	41,074	175	1.7092	0	1.7092	1.7092
8:00 PM – 9:00 PM	38,623	200	1.293	0	1.293	1.293
8:00 PM – 9:00 PM	36,498	225	1.5764	0	1.5764	1.5764
8:00 PM – 9:00 PM	34,015	250	2.7663	0	2.7663	2.7663
8:00 PM – 9:00 PM	31,975	275	2.9574	0	2.9574	2.9574
8:00 PM – 9:00 PM	30,080	300	1.4747	0	1.4747	1.4747
8:00 PM – 9:00 PM	28,308	325	.4599	0	.4599	.4599
8:00 PM – 9:00 PM	26,644	350	1.9627	0	1.9627	1.9627
8:00 PM – 9:00 PM	25,074	375	2.8136	0	2.8136	2.8136
8:00 PM – 9:00 PM	23,586	400	2.8662	0	2.8662	2.8662
8:00 PM – 9:00 PM	22,171	425	1.4614	0	1.4614	1.4614
8:00 PM – 9:00 PM	20,823	450	3.9624	0	3.9624	3.9624
8:00 PM – 9:00 PM	19,533	475	1.9199	0	1.9199	1.9199
8:00 PM – 9:00 PM	18,298	500	.4909	0	.4909	.4909
8:00 PM – 9:00 PM	17,112	525	2.2039	0	2.2039	2.2039
8:00 PM – 9:00 PM	15,970	550	2.7111	0	2.7111	2.7111
8:00 PM – 9:00 PM	14,870	575	2.9933	0	2.9933	2.9933
8:00 PM – 9:00 PM	13,808	600	3.4016	0	3.4016	3.4016
8:00 PM – 9:00 PM	12,781	625	3.164	0	3.164	3.164
8:00 PM – 9:00 PM	11,786	650	2.7551	0	2.7551	2.7551
8:00 PM – 9:00 PM	10,823	675	2.5182	0	2.5182	2.5182
8:00 PM – 9:00 PM	9,888	700	.2381	0	.2381	.2381
8:00 PM – 9:00 PM	8,979	725	1.1483	0	1.1483	1.1483

8:00 PM – 9:00 PM	8,095	750	.298	0	.298	.298
8:00 PM – 9:00 PM	7,235	775	.6691	0	.6691	.6691
8:00 PM – 9:00 PM	6,398	800	.0481	0	.0481	.0481
8:00 PM – 9:00 PM	5,581	825	3.5165	0	3.5165	3.5165
8:00 PM – 9:00 PM	4,784	850	1.3399	0	1.3399	1.3399
8:00 PM – 9:00 PM	4,005	875	.8044	0	.8044	.8044
8:00 PM – 9:00 PM	3,245	900	2.9278	0	2.9278	2.9278
8:00 PM – 9:00 PM	2,501	925	1.8915	0	1.8915	1.8915
8:00 PM – 9:00 PM	1,774	950	2.7007	0	2.7007	2.7007
8:00 PM – 9:00 PM	1,062	975	1.8799	0	1.8799	1.8799
8:00 PM – 9:00 PM	364	1000	.9588	0	.9588	.9588
9:00 PM – 10:00 PM	52,947	100	4.253	0	4.253	4.253
9:00 PM – 10:00 PM	48,448	125	4.3219	0	4.3219	4.3219
9:00 PM – 10:00 PM	44,073	150	.9037	0	.9037	.9037
9:00 PM – 10:00 PM	41,074	175	1.1373	0	1.1373	1.1373
9:00 PM – 10:00 PM	38,623	200	.2898	0	.2898	.2898
9:00 PM – 10:00 PM	36,498	225	4.0767	0	4.0767	4.0767
9:00 PM – 10:00 PM	34,015	250	2.552	0	2.552	2.552
9:00 PM – 10:00 PM	31,975	275	3.065	0	3.065	3.065
9:00 PM – 10:00 PM	30,080	300	.8452	0	.8452	.8452
9:00 PM – 10:00 PM	28,308	325	.1931	0	.1931	.1931
9:00 PM – 10:00 PM	26,644	350	.1254	0	.1254	.1254
9:00 PM – 10:00 PM	25,074	375	.0414	0	.0414	.0414
9:00 PM – 10:00 PM	23,586	400	.4016	0	.4016	.4016
9:00 PM – 10:00 PM	22,171	425	1.1527	0	1.1527	1.1527
9:00 PM – 10:00 PM	20,823	450	5.3631	0	5.3631	5.3631
9:00 PM – 10:00 PM	19,533	475	4.0313	0	4.0313	4.0313
9:00 PM – 10:00 PM	18,298	500	3.166	0	3.166	3.166
9:00 PM – 10:00 PM	17,112	525	.6913	0	.6913	.6913
9:00 PM – 10:00 PM	15,970	550	1.0809	0	1.0809	1.0809
9:00 PM – 10:00 PM	14,870	575	.9222	0	.9222	.9222
9:00 PM – 10:00 PM	13,808	600	.4653	0	.4653	.4653
9:00 PM – 10:00 PM	12,781	625	.1622	0	.1622	.1622
9:00 PM – 10:00 PM	11,786	650	.5647	0	.5647	.5647
9:00 PM – 10:00 PM	10,823	675	1.0352	0	1.0352	1.0352
9:00 PM – 10:00 PM	9,888	700	.121	0	.121	.121
9:00 PM – 10:00 PM	8,979	725	.1506	0	.1506	.1506
9:00 PM – 10:00 PM	8,095	750	2.1711	0	2.1711	2.1711
9:00 PM – 10:00 PM	7,235	775	.2594	0	.2594	.2594
9:00 PM – 10:00 PM	6,398	800	.7598	0	.7598	.7598
9:00 PM – 10:00 PM	5,581	825	.338	0	.338	.338
9:00 PM – 10:00 PM	4,784	850	1.1635	0	1.1635	1.1635
9:00 PM – 10:00 PM	4,005	875	1.6906	0	1.6906	1.6906
9:00 PM – 10:00 PM	3,245	900	2.5498	0	2.5498	2.5498
9:00 PM – 10:00 PM	2,501	925	1.4246	0	1.4246	1.4246
9:00 PM – 10:00 PM	1,774	950	1.9754	0	1.9754	1.9754
9:00 PM – 10:00 PM	1,062	975	1.5493	0	1.5493	1.5493
9:00 PM – 10:00 PM	364	1000	.4354	0	.4354	.4354
10:00 PM – 11:00 PM	52,947	100	1.5399	0	1.5399	1.5399
10:00 PM – 11:00 PM	48,448	125	.6373	0	.6373	.6373
10:00 PM – 11:00 PM	44,073	150	1.2697	0	1.2697	1.2697
10:00 PM – 11:00 PM	41,074	175	1.6807	0	1.6807	1.6807
10:00 PM – 11:00 PM	38,623	200	3.0019	0	3.0019	3.0019

10:00 PM – 11:00 PM	36,498	225	2.4593	0	2.4593	2.4593
10:00 PM – 11:00 PM	34,015	250	.5781	0	.5781	.5781
10:00 PM – 11:00 PM	31,975	275	.2823	0	.2823	.2823
10:00 PM – 11:00 PM	30,080	300	.3895	0	.3895	.3895
10:00 PM – 11:00 PM	28,308	325	.0528	0	.0528	.0528
10:00 PM – 11:00 PM	26,644	350	.5959	0	.5959	.5959
10:00 PM – 11:00 PM	25,074	375	.8673	0	.8673	.8673
10:00 PM – 11:00 PM	23,586	400	1.1171	0	1.1171	1.1171
10:00 PM – 11:00 PM	22,171	425	3.4643	0	3.4643	3.4643
10:00 PM – 11:00 PM	20,823	450	2.0181	0	2.0181	2.0181
10:00 PM – 11:00 PM	19,533	475	.9591	0	.9591	.9591
10:00 PM – 11:00 PM	18,298	500	.5571	0	.5571	.5571
10:00 PM – 11:00 PM	17,112	525	1.5763	0	1.5763	1.5763
10:00 PM – 11:00 PM	15,970	550	1.589	0	1.589	1.589
10:00 PM – 11:00 PM	14,870	575	1.5734	0	1.5734	1.5734
10:00 PM – 11:00 PM	13,808	600	1.8473	0	1.8473	1.8473
10:00 PM – 11:00 PM	12,781	625	2.1772	0	2.1772	2.1772
10:00 PM – 11:00 PM	11,786	650	2.3826	0	2.3826	2.3826
10:00 PM – 11:00 PM	10,823	675	4.0833	0	4.0833	4.0833
10:00 PM – 11:00 PM	9,888	700	4.6262	0	4.6262	4.6262
10:00 PM – 11:00 PM	8,979	725	5.5994	0	5.5994	5.5994
10:00 PM – 11:00 PM	8,095	750	3.2773	0	3.2773	3.2773
10:00 PM – 11:00 PM	7,235	775	2.5308	0	2.5308	2.5308
10:00 PM – 11:00 PM	6,398	800	2.4313	0	2.4313	2.4313
10:00 PM – 11:00 PM	5,581	825	4.0471	0	4.0471	4.0471
10:00 PM – 11:00 PM	4,784	850	2.3833	0	2.3833	2.3833
10:00 PM – 11:00 PM	4,005	875	3.5376	0	3.5376	3.5376
10:00 PM – 11:00 PM	3,245	900	2.2578	0	2.2578	2.2578
10:00 PM – 11:00 PM	2,501	925	.8235	0	.8235	.8235
10:00 PM – 11:00 PM	1,774	950	.6612	0	.6612	.6612
10:00 PM – 11:00 PM	1,062	975	1.7843	0	1.7843	1.7843
10:00 PM – 11:00 PM	364	1000	1.9073	0	1.9073	1.9073
11:00 PM – 12:00 AM	52,947	100	.4237	0	.4237	.4237
11:00 PM – 12:00 AM	48,448	125	.35	0	.35	.35
11:00 PM – 12:00 AM	44,073	150	2.7788	0	2.7788	2.7788
11:00 PM – 12:00 AM	41,074	175	0	0	0	0
11:00 PM – 12:00 AM	38,623	200	.705	0	.705	.705
11:00 PM – 12:00 AM	36,498	225	.1489	0	.1489	.1489
11:00 PM – 12:00 AM	34,015	250	.6468	0	.6468	.6468
11:00 PM – 12:00 AM	31,975	275	2.0443	0	2.0443	2.0443
11:00 PM – 12:00 AM	30,080	300	2.1547	0	2.1547	2.1547
11:00 PM – 12:00 AM	28,308	325	1.629	0	1.629	1.629
11:00 PM – 12:00 AM	26,644	350	1.0893	0	1.0893	1.0893
11:00 PM – 12:00 AM	25,074	375	.3678	0	.3678	.3678
11:00 PM – 12:00 AM	23,586	400	.1534	0	.1534	.1534
11:00 PM – 12:00 AM	22,171	425	.1498	0	.1498	.1498
11:00 PM – 12:00 AM	20,823	450	.4225	0	.4225	.4225
11:00 PM – 12:00 AM	19,533	475	.4137	0	.4137	.4137
11:00 PM – 12:00 AM	18,298	500	1.559	0	1.559	1.559
11:00 PM – 12:00 AM	17,112	525	.8249	0	.8249	.8249
11:00 PM – 12:00 AM	15,970	550	.3123	0	.3123	.3123
11:00 PM – 12:00 AM	14,870	575	1.2768	0	1.2768	1.2768
11:00 PM – 12:00 AM	13,808	600	1.6504	0	1.6504	1.6504

11:00 PM – 12:00 AM	12,781	625	1.8406	0	1.8406	1.8406
11:00 PM – 12:00 AM	11,786	650	1.8705	0	1.8705	1.8705
11:00 PM – 12:00 AM	10,823	675	.6171	0	.6171	.6171
11:00 PM – 12:00 AM	9,888	700	.2554	0	.2554	.2554
11:00 PM – 12:00 AM	8,979	725	.0919	0	.0919	.0919
11:00 PM – 12:00 AM	8,095	750	2.1249	0	2.1249	2.1249
11:00 PM – 12:00 AM	7,235	775	2.8172	0	2.8172	2.8172
11:00 PM – 12:00 AM	6,398	800	6.594	0	6.594	6.594
11:00 PM – 12:00 AM	5,581	825	6.7923	0	6.7923	6.7923
11:00 PM – 12:00 AM	4,784	850	6.2777	0	6.2777	6.2777
11:00 PM – 12:00 AM	4,005	875	3.1598	0	3.1598	3.1598
11:00 PM – 12:00 AM	3,245	900	.7197	0	.7197	.7197
11:00 PM – 12:00 AM	2,501	925	.8224	0	.8224	.8224
11:00 PM – 12:00 AM	1,774	950	1.1913	0	1.1913	1.1913
11:00 PM – 12:00 AM	1,062	975	.624	0	.624	.624
11:00 PM – 12:00 AM	364	1000	.9176	0	.9176	.9176
12:00 AM – 1:00 AM	52,947	100	3.9899	0	3.9899	3.9899
12:00 AM – 1:00 AM	48,448	125	1.8202	0	1.8202	1.8202
12:00 AM – 1:00 AM	44,073	150	.7747	0	.7747	.7747
12:00 AM – 1:00 AM	41,074	175	.3674	0	.3674	.3674
12:00 AM – 1:00 AM	38,623	200	.4876	0	.4876	.4876
12:00 AM – 1:00 AM	36,498	225	.0414	0	.0414	.0414
12:00 AM – 1:00 AM	34,015	250	.8352	0	.8352	.8352
12:00 AM – 1:00 AM	31,975	275	.1784	0	.1784	.1784
12:00 AM – 1:00 AM	30,080	300	.7451	0	.7451	.7451
12:00 AM – 1:00 AM	28,308	325	.8031	0	.8031	.8031
12:00 AM – 1:00 AM	26,644	350	.5584	0	.5584	.5584
12:00 AM – 1:00 AM	25,074	375	.5237	0	.5237	.5237
12:00 AM – 1:00 AM	23,586	400	.8132	0	.8132	.8132
12:00 AM – 1:00 AM	22,171	425	.2595	0	.2595	.2595
12:00 AM – 1:00 AM	20,823	450	.5563	0	.5563	.5563
12:00 AM – 1:00 AM	19,533	475	.7396	0	.7396	.7396
12:00 AM – 1:00 AM	18,298	500	2.0239	0	2.0239	2.0239
12:00 AM – 1:00 AM	17,112	525	1.9403	0	1.9403	1.9403
12:00 AM – 1:00 AM	15,970	550	2.4473	0	2.4473	2.4473
12:00 AM – 1:00 AM	14,870	575	3.5105	0	3.5105	3.5105
12:00 AM – 1:00 AM	13,808	600	3.889	0	3.889	3.889
12:00 AM – 1:00 AM	12,781	625	3.3394	0	3.3394	3.3394
12:00 AM – 1:00 AM	11,786	650	2.2777	0	2.2777	2.2777
12:00 AM – 1:00 AM	10,823	675	1.4678	0	1.4678	1.4678
12:00 AM – 1:00 AM	9,888	700	.537	0	.537	.537
12:00 AM – 1:00 AM	8,979	725	.1033	0	.1033	.1033
12:00 AM – 1:00 AM	8,095	750	.3404	0	.3404	.3404
12:00 AM – 1:00 AM	7,235	775	3.3862	0	3.3862	3.3862
12:00 AM – 1:00 AM	6,398	800	4.6268	0	4.6268	4.6268
12:00 AM – 1:00 AM	5,581	825	4.095	0	4.095	4.095
12:00 AM – 1:00 AM	4,784	850	.5097	0	.5097	.5097
12:00 AM – 1:00 AM	4,005	875	.3382	0	.3382	.3382
12:00 AM – 1:00 AM	3,245	900	1.9918	0	1.9918	1.9918
12:00 AM – 1:00 AM	2,501	925	3.0468	0	3.0468	3.0468
12:00 AM – 1:00 AM	1,774	950	2.6706	0	2.6706	2.6706
12:00 AM – 1:00 AM	1,062	975	2.9669	0	2.9669	2.9669
12:00 AM – 1:00 AM	364	1000	1.3928	0	1.3928	1.3928

**Table B-5: Statistical Results for Wind Speed Deviation Values Grouped by Altitude and Hour for
5/26/99**

The table shown below displays the statistical results for wind speed deviations grouped first by altitude then by hour for May 26, 1999 for the time span of 10:00 AM until 12:00 AM.

Comparison Hour on 5/26/99	Altitude (ft)	Pressure (Mb)	Average Deviation (knots)	Standard Deviation (knots)	Max. Deviation (knots)	Min. Deviation (knots)
10:00 AM – 11:00 AM	52,947	100	.13057042	0	.13057042	.13057042
10:00 AM – 11:00 AM	48,448	125	.01181879	0	.01181879	.01181879
10:00 AM – 11:00 AM	44,073	150	.045758935	0	.045758935	.045758935
10:00 AM – 11:00 AM	41,074	175	.005365109	0	.005365109	.005365109
10:00 AM – 11:00 AM	38,623	200	.098885176	0	.098885176	.098885176
10:00 AM – 11:00 AM	36,498	225	.061426608	0	.061426608	.061426608
10:00 AM – 11:00 AM	34,015	250	.086075006	0	.086075006	.086075006
10:00 AM – 11:00 AM	31,975	275	.08829103	0	.08829103	.08829103
10:00 AM – 11:00 AM	30,080	300	.136440937	0	.136440937	.136440937
10:00 AM – 11:00 AM	28,308	325	.186418092	0	.186418092	.186418092
10:00 AM – 11:00 AM	26,644	350	.012227005	0	.012227005	.012227005
10:00 AM – 11:00 AM	25,074	375	.091090217	0	.091090217	.091090217
10:00 AM – 11:00 AM	23,586	400	.120948214	0	.120948214	.120948214
10:00 AM – 11:00 AM	22,171	425	.132786443	0	.132786443	.132786443
10:00 AM – 11:00 AM	20,823	450	.139687217	0	.139687217	.139687217
10:00 AM – 11:00 AM	19,533	475	.113464276	0	.113464276	.113464276
10:00 AM – 11:00 AM	18,298	500	.087338528	0	.087338528	.087338528
10:00 AM – 11:00 AM	17,112	525	.036875404	0	.036875404	.036875404
10:00 AM – 11:00 AM	15,970	550	.134749762	0	.134749762	.134749762
10:00 AM – 11:00 AM	14,870	575	.171450216	0	.171450216	.171450216
10:00 AM – 11:00 AM	13,808	600	.036739332	0	.036739332	.036739332
10:00 AM – 11:00 AM	12,781	625	.055283947	0	.055283947	.055283947
10:00 AM – 11:00 AM	11,786	650	.043309646	0	.043309646	.043309646
10:00 AM – 11:00 AM	10,823	675	.006395365	0	.006395365	.006395365
10:00 AM – 11:00 AM	9,888	700	.01166328	0	.01166328	.01166328
10:00 AM – 11:00 AM	8,979	725	.043115258	0	.043115258	.043115258
10:00 AM – 11:00 AM	8,095	750	.039616274	0	.039616274	.039616274
10:00 AM – 11:00 AM	7,235	775	.00810598	0	.00810598	.00810598
10:00 AM – 11:00 AM	6,398	800	.007172917	0	.007172917	.007172917
10:00 AM – 11:00 AM	5,581	825	.024123551	0	.024123551	.024123551
10:00 AM – 11:00 AM	4,784	850	.061173904	0	.061173904	.061173904
10:00 AM – 11:00 AM	4,005	875	.269110747	0	.269110747	.269110747
10:00 AM – 11:00 AM	3,245	900	.104872326	0	.104872326	.104872326
10:00 AM – 11:00 AM	2,501	925	.121706327	0	.121706327	.121706327
10:00 AM – 11:00 AM	1,774	950	.16489934	0	.16489934	.16489934
10:00 AM – 11:00 AM	1,062	975	.047936081	0	.047936081	.047936081
10:00 AM – 11:00 AM	364	1000	.026961616	0	.026961616	.026961616
11:00 AM – 12:00 PM	52,947	100	.119898518	0	.119898518	.119898518
11:00 AM – 12:00 PM	48,448	125	.028380648	0	.028380648	.028380648
11:00 AM – 12:00 PM	44,073	150	.023054417	0	.023054417	.023054417
11:00 AM – 12:00 PM	41,074	175	.000116633	0	.000116633	.000116633
11:00 AM – 12:00 PM	38,623	200	.187837124	0	.187837124	.187837124
11:00 AM – 12:00 PM	36,498	225	.083858983	0	.083858983	.083858983

11:00 AM – 12:00 PM	34,015	250	.186962378	0	.186962378	.186962378
11:00 AM – 12:00 PM	31,975	275	.159320405	0	.159320405	.159320405
11:00 AM – 12:00 PM	30,080	300	.061135026	0	.061135026	.061135026
11:00 AM – 12:00 PM	28,308	325	.14757937	0	.14757937	.14757937
11:00 AM – 12:00 PM	26,644	350	.166143424	0	.166143424	.166143424
11:00 AM – 12:00 PM	25,074	375	.283009489	0	.283009489	.283009489
11:00 AM – 12:00 PM	23,586	400	.150145291	0	.150145291	.150145291
11:00 AM – 12:00 PM	22,171	425	.021032782	0	.021032782	.021032782
11:00 AM – 12:00 PM	20,823	450	.136654764	0	.136654764	.136654764
11:00 AM – 12:00 PM	19,533	475	.102656303	0	.102656303	.102656303
11:00 AM – 12:00 PM	18,298	500	.310340442	0	.310340442	.310340442
11:00 AM – 12:00 PM	17,112	525	.37306945	0	.37306945	.37306945
11:00 AM – 12:00 PM	15,970	550	.405901583	0	.405901583	.405901583
11:00 AM – 12:00 PM	14,870	575	.332520113	0	.332520113	.332520113
11:00 AM – 12:00 PM	13,808	600	.231729935	0	.231729935	.231729935
11:00 AM – 12:00 PM	12,781	625	.052387566	0	.052387566	.052387566
11:00 AM – 12:00 PM	11,786	650	.044359342	0	.044359342	.044359342
11:00 AM – 12:00 PM	10,823	675	.0741979	0	.0741979	.0741979
11:00 AM – 12:00 PM	9,888	700	.079932346	0	.079932346	.079932346
11:00 AM – 12:00 PM	8,979	725	.079815713	0	.079815713	.079815713
11:00 AM – 12:00 PM	8,095	750	.021771456	0	.021771456	.021771456
11:00 AM – 12:00 PM	7,235	775	.058996758	0	.058996758	.058996758
11:00 AM – 12:00 PM	6,398	800	.100381963	0	.100381963	.100381963
11:00 AM – 12:00 PM	5,581	825	.19390203	0	.19390203	.19390203
11:00 AM – 12:00 PM	4,784	850	.249496998	0	.249496998	.249496998
11:00 AM – 12:00 PM	4,005	875	.164121788	0	.164121788	.164121788
11:00 AM – 12:00 PM	3,245	900	.286819494	0	.286819494	.286819494
11:00 AM – 12:00 PM	2,501	925	.365352246	0	.365352246	.365352246
11:00 AM – 12:00 PM	1,774	950	.295780781	0	.295780781	.295780781
11:00 AM – 12:00 PM	1,062	975	.194213051	0	.194213051	.194213051
11:00 AM – 12:00 PM	364	1000	.156307391	0	.156307391	.156307391
12:00 PM – 1:00 PM	52,947	100	.091945524	0	.091945524	.091945524
12:00 PM – 1:00 PM	48,448	125	.061543241	0	.061543241	.061543241
12:00 PM – 1:00 PM	44,073	150	.099118441	0	.099118441	.099118441
12:00 PM – 1:00 PM	41,074	175	.118518364	0	.118518364	.118518364
12:00 PM – 1:00 PM	38,623	200	.214993128	0	.214993128	.214993128
12:00 PM – 1:00 PM	36,498	225	.168689906	0	.168689906	.168689906
12:00 PM – 1:00 PM	34,015	250	.011624402	0	.011624402	.011624402
12:00 PM – 1:00 PM	31,975	275	.17640711	0	.17640711	.17640711
12:00 PM – 1:00 PM	30,080	300	.157259892	0	.157259892	.157259892
12:00 PM – 1:00 PM	28,308	325	.036622699	0	.036622699	.036622699
12:00 PM – 1:00 PM	26,644	350	.162255664	0	.162255664	.162255664
12:00 PM – 1:00 PM	25,074	375	.275408918	0	.275408918	.275408918
12:00 PM – 1:00 PM	23,586	400	.311001361	0	.311001361	.311001361
12:00 PM – 1:00 PM	22,171	425	.122814338	0	.122814338	.122814338
12:00 PM – 1:00 PM	20,823	450	.050249298	0	.050249298	.050249298
12:00 PM – 1:00 PM	19,533	475	.080457193	0	.080457193	.080457193
12:00 PM – 1:00 PM	18,298	500	.089787817	0	.089787817	.089787817
12:00 PM – 1:00 PM	17,112	525	.095366753	0	.095366753	.095366753
12:00 PM – 1:00 PM	15,970	550	.092839709	0	.092839709	.092839709
12:00 PM – 1:00 PM	14,870	575	.107360492	0	.107360492	.107360492
12:00 PM – 1:00 PM	13,808	600	.139764972	0	.139764972	.139764972
12:00 PM – 1:00 PM	12,781	625	.088213274	0	.088213274	.088213274

12:00 PM – 1:00 PM	11,786	650	.167931793	0	.167931793	.167931793
12:00 PM – 1:00 PM	10,823	675	.148784575	0	.148784575	.148784575
12:00 PM – 1:00 PM	9,888	700	.105086153	0	.105086153	.105086153
12:00 PM – 1:00 PM	8,979	725	.098204818	0	.098204818	.098204818
12:00 PM – 1:00 PM	8,095	750	.079504692	0	.079504692	.079504692
12:00 PM – 1:00 PM	7,235	775	.035067595	0	.035067595	.035067595
12:00 PM – 1:00 PM	6,398	800	0	0	0	0
12:00 PM – 1:00 PM	5,581	825	.108254677	0	.108254677	.108254677
12:00 PM – 1:00 PM	4,784	850	.161458673	0	.161458673	.161458673
12:00 PM – 1:00 PM	4,005	875	.219911144	0	.219911144	.219911144
12:00 PM – 1:00 PM	3,245	900	.243334898	0	.243334898	.243334898
12:00 PM – 1:00 PM	2,501	925	.20377694	0	.20377694	.20377694
12:00 PM – 1:00 PM	1,774	950	.195943104	0	.195943104	.195943104
12:00 PM – 1:00 PM	1,062	975	.189003452	0	.189003452	.189003452
12:00 PM – 1:00 PM	364	1000	.161789132	0	.161789132	.161789132
1:00 PM – 2:00 PM	52,947	100	.048519245	0	.048519245	.048519245
1:00 PM – 2:00 PM	48,448	125	.086871997	0	.086871997	.086871997
1:00 PM – 2:00 PM	44,073	150	.112706162	0	.112706162	.112706162
1:00 PM – 2:00 PM	41,074	175	.132805882	0	.132805882	.132805882
1:00 PM – 2:00 PM	38,623	200	.144566356	0	.144566356	.144566356
1:00 PM – 2:00 PM	36,498	225	.16441337	0	.16441337	.16441337
1:00 PM – 2:00 PM	34,015	250	.316249837	0	.316249837	.316249837
1:00 PM – 2:00 PM	31,975	275	.140523085	0	.140523085	.140523085
1:00 PM – 2:00 PM	30,080	300	.127363018	0	.127363018	.127363018
1:00 PM – 2:00 PM	28,308	325	.155763104	0	.155763104	.155763104
1:00 PM – 2:00 PM	26,644	350	.065158858	0	.065158858	.065158858
1:00 PM – 2:00 PM	25,074	375	.021207731	0	.021207731	.021207731
1:00 PM – 2:00 PM	23,586	400	.063195539	0	.063195539	.063195539
1:00 PM – 2:00 PM	22,171	425	.051629453	0	.051629453	.051629453
1:00 PM – 2:00 PM	20,823	450	.019477678	0	.019477678	.019477678
1:00 PM – 2:00 PM	19,533	475	.117313158	0	.117313158	.117313158
1:00 PM – 2:00 PM	18,298	500	.051726647	0	.051726647	.051726647
1:00 PM – 2:00 PM	17,112	525	.071573662	0	.071573662	.071573662
1:00 PM – 2:00 PM	15,970	550	.159223211	0	.159223211	.159223211
1:00 PM – 2:00 PM	14,870	575	.21236889	0	.21236889	.21236889
1:00 PM – 2:00 PM	13,808	600	.147676564	0	.147676564	.147676564
1:00 PM – 2:00 PM	12,781	625	.037478006	0	.037478006	.037478006
1:00 PM – 2:00 PM	11,786	650	.102092578	0	.102092578	.102092578
1:00 PM – 2:00 PM	10,823	675	.071748611	0	.071748611	.071748611
1:00 PM – 2:00 PM	9,888	700	.000602603	0	.000602603	.000602603
1:00 PM – 2:00 PM	8,979	725	.022140793	0	.022140793	.022140793
1:00 PM – 2:00 PM	8,095	750	.043231891	0	.043231891	.043231891
1:00 PM – 2:00 PM	7,235	775	.069357638	0	.069357638	.069357638
1:00 PM – 2:00 PM	6,398	800	.078921528	0	.078921528	.078921528
1:00 PM – 2:00 PM	5,581	825	.097310633	0	.097310633	.097310633
1:00 PM – 2:00 PM	4,784	850	.223137985	0	.223137985	.223137985
1:00 PM – 2:00 PM	4,005	875	.22661753	0	.22661753	.22661753
1:00 PM – 2:00 PM	3,245	900	.089593429	0	.089593429	.089593429
1:00 PM – 2:00 PM	2,501	925	.120345611	0	.120345611	.120345611
1:00 PM – 2:00 PM	1,774	950	.125594087	0	.125594087	.125594087
1:00 PM – 2:00 PM	1,062	975	.269460646	0	.269460646	.269460646
1:00 PM – 2:00 PM	364	1000	.133214096	0	.133214096	.133214096
2:00 PM – 3:00 PM	52,947	100	.128684856	0	.128684856	.128684856

2:00 PM – 3:00 PM	48,448	125	.068910546	0	.068910546	.068910546
2:00 PM – 3:00 PM	44,073	150	.030169018	0	.030169018	.030169018
2:00 PM – 3:00 PM	41,074	175	.06593641	0	.06593641	.06593641
2:00 PM – 3:00 PM	38,623	200	.075714126	0	.075714126	.075714126
2:00 PM – 3:00 PM	36,498	225	.231146771	0	.231146771	.231146771
2:00 PM – 3:00 PM	34,015	250	.316424786	0	.316424786	.316424786
2:00 PM – 3:00 PM	31,975	275	.285964187	0	.285964187	.285964187
2:00 PM – 3:00 PM	30,080	300	.156385146	0	.156385146	.156385146
2:00 PM – 3:00 PM	28,308	325	.007211795	0	.007211795	.007211795
2:00 PM – 3:00 PM	26,644	350	.116107952	0	.116107952	.116107952
2:00 PM – 3:00 PM	25,074	375	.018739003	0	.018739003	.018739003
2:00 PM – 3:00 PM	23,586	400	.192482998	0	.192482998	.192482998
2:00 PM – 3:00 PM	22,171	425	.173199708	0	.173199708	.173199708
2:00 PM – 3:00 PM	20,823	450	.038799845	0	.038799845	.038799845
2:00 PM – 3:00 PM	19,533	475	.057733236	0	.057733236	.057733236
2:00 PM – 3:00 PM	18,298	500	.037283618	0	.037283618	.037283618
2:00 PM – 3:00 PM	17,112	525	.032132336	0	.032132336	.032132336
2:00 PM – 3:00 PM	15,970	550	.102034261	0	.102034261	.102034261
2:00 PM – 3:00 PM	14,870	575	.134555374	0	.134555374	.134555374
2:00 PM – 3:00 PM	13,808	600	.040121683	0	.040121683	.040121683
2:00 PM – 3:00 PM	12,781	625	.165424188	0	.165424188	.165424188
2:00 PM – 3:00 PM	11,786	650	.119529181	0	.119529181	.119529181
2:00 PM – 3:00 PM	10,823	675	.086755364	0	.086755364	.086755364
2:00 PM – 3:00 PM	9,888	700	.080107295	0	.080107295	.080107295
2:00 PM – 3:00 PM	8,979	725	.020663444	0	.020663444	.020663444
2:00 PM – 3:00 PM	8,095	750	.111695345	0	.111695345	.111695345
2:00 PM – 3:00 PM	7,235	775	.16911756	0	.16911756	.16911756
2:00 PM – 3:00 PM	6,398	800	.176523743	0	.176523743	.176523743
2:00 PM – 3:00 PM	5,581	825	.101295587	0	.101295587	.101295587
2:00 PM – 3:00 PM	4,784	850	.199539282	0	.199539282	.199539282
2:00 PM – 3:00 PM	4,005	875	.243840307	0	.243840307	.243840307
2:00 PM – 3:00 PM	3,245	900	.225937172	0	.225937172	.225937172
2:00 PM – 3:00 PM	2,501	925	.238339127	0	.238339127	.238339127
2:00 PM – 3:00 PM	1,774	950	.296636088	0	.296636088	.296636088
2:00 PM – 3:00 PM	1,062	975	.18807039	0	.18807039	.18807039
2:00 PM – 3:00 PM	364	1000	.101062321	0	.101062321	.101062321
3:00 PM – 4:00 PM	52,947	100	.032734939	0	.032734939	.032734939
3:00 PM – 4:00 PM	48,448	125	.077210914	0	.077210914	.077210914
3:00 PM – 4:00 PM	44,073	150	.058199767	0	.058199767	.058199767
3:00 PM – 4:00 PM	41,074	175	.031024325	0	.031024325	.031024325
3:00 PM – 4:00 PM	38,623	200	.330731743	0	.330731743	.330731743
3:00 PM – 4:00 PM	36,498	225	.075597493	0	.075597493	.075597493
3:00 PM – 4:00 PM	34,015	250	.053203996	0	.053203996	.053203996
3:00 PM – 4:00 PM	31,975	275	.261685126	0	.261685126	.261685126
3:00 PM – 4:00 PM	30,080	300	.209355876	0	.209355876	.209355876
3:00 PM – 4:00 PM	28,308	325	.018039206	0	.018039206	.018039206
3:00 PM – 4:00 PM	26,644	350	.019730382	0	.019730382	.019730382
3:00 PM – 4:00 PM	25,074	375	.105766511	0	.105766511	.105766511
3:00 PM – 4:00 PM	23,586	400	.1214925	0	.1214925	.1214925
3:00 PM – 4:00 PM	22,171	425	.074742186	0	.074742186	.074742186
3:00 PM – 4:00 PM	20,823	450	.029061006	0	.029061006	.029061006
3:00 PM – 4:00 PM	19,533	475	.029216516	0	.029216516	.029216516
3:00 PM – 4:00 PM	18,298	500	.004801384	0	.004801384	.004801384

3:00 PM – 4:00 PM	17,112	525	.046031078	0	.046031078	.046031078
3:00 PM – 4:00 PM	15,970	550	.093364556	0	.093364556	.093364556
3:00 PM – 4:00 PM	14,870	575	.05637252	0	.05637252	.05637252
3:00 PM – 4:00 PM	13,808	600	.043912249	0	.043912249	.043912249
3:00 PM – 4:00 PM	12,781	625	.010127615	0	.010127615	.010127615
3:00 PM – 4:00 PM	11,786	650	.058083134	0	.058083134	.058083134
3:00 PM – 4:00 PM	10,823	675	.049996594	0	.049996594	.049996594
3:00 PM – 4:00 PM	9,888	700	.033473614	0	.033473614	.033473614
3:00 PM – 4:00 PM	8,979	725	.053884354	0	.053884354	.053884354
3:00 PM – 4:00 PM	8,095	750	.115602544	0	.115602544	.115602544
3:00 PM – 4:00 PM	7,235	775	.257875121	0	.257875121	.257875121
3:00 PM – 4:00 PM	6,398	800	.222127168	0	.222127168	.222127168
3:00 PM – 4:00 PM	5,581	825	.202299592	0	.202299592	.202299592
3:00 PM – 4:00 PM	4,784	850	.150028658	0	.150028658	.150028658
3:00 PM – 4:00 PM	4,005	875	.103686559	0	.103686559	.103686559
3:00 PM – 4:00 PM	3,245	900	.136382621	0	.136382621	.136382621
3:00 PM – 4:00 PM	2,501	925	.226442581	0	.226442581	.226442581
3:00 PM – 4:00 PM	1,774	950	.195165552	0	.195165552	.195165552
3:00 PM – 4:00 PM	1,062	975	.092567566	0	.092567566	.092567566
3:00 PM – 4:00 PM	364	1000	.024065234	0	.024065234	.024065234
4:00 PM- 5:00 PM	52,947	100	.152302998	0	.152302998	.152302998
4:00 PM- 5:00 PM	48,448	125	.1590677	0	.1590677	.1590677
4:00 PM- 5:00 PM	44,073	150	.189100646	0	.189100646	.189100646
4:00 PM- 5:00 PM	41,074	175	.122853216	0	.122853216	.122853216
4:00 PM- 5:00 PM	38,623	200	.219911144	0	.219911144	.219911144
4:00 PM- 5:00 PM	36,498	225	.073420348	0	.073420348	.073420348
4:00 PM- 5:00 PM	34,015	250	.011430014	0	.011430014	.011430014
4:00 PM- 5:00 PM	31,975	275	.278227544	0	.278227544	.278227544
4:00 PM- 5:00 PM	30,080	300	.307891153	0	.307891153	.307891153
4:00 PM- 5:00 PM	28,308	325	.164005156	0	.164005156	.164005156
4:00 PM- 5:00 PM	26,644	350	.168359447	0	.168359447	.168359447
4:00 PM- 5:00 PM	25,074	375	.270665851	0	.270665851	.270665851
4:00 PM- 5:00 PM	23,586	400	.363136223	0	.363136223	.363136223
4:00 PM- 5:00 PM	22,171	425	.334425115	0	.334425115	.334425115
4:00 PM- 5:00 PM	20,823	450	.404074336	0	.404074336	.404074336
4:00 PM- 5:00 PM	19,533	475	.103822631	0	.103822631	.103822631
4:00 PM- 5:00 PM	18,298	500	.255484148	0	.255484148	.255484148
4:00 PM- 5:00 PM	17,112	525	.398612033	0	.398612033	.398612033
4:00 PM- 5:00 PM	15,970	550	.187409471	0	.187409471	.187409471
4:00 PM- 5:00 PM	14,870	575	.147501614	0	.147501614	.147501614
4:00 PM- 5:00 PM	13,808	600	.109926414	0	.109926414	.109926414
4:00 PM- 5:00 PM	12,781	625	.078474436	0	.078474436	.078474436
4:00 PM- 5:00 PM	11,786	650	.047897203	0	.047897203	.047897203
4:00 PM- 5:00 PM	10,823	675	.00209939	0	.00209939	.00209939
4:00 PM- 5:00 PM	9,888	700	.011255065	0	.011255065	.011255065
4:00 PM- 5:00 PM	8,979	725	.048363734	0	.048363734	.048363734
4:00 PM- 5:00 PM	8,095	750	.058413594	0	.058413594	.058413594
4:00 PM- 5:00 PM	7,235	775	.101295587	0	.101295587	.101295587
4:00 PM- 5:00 PM	6,398	800	.10901279	0	.10901279	.10901279
4:00 PM- 5:00 PM	5,581	825	.116438412	0	.116438412	.116438412
4:00 PM- 5:00 PM	4,784	850	.086677609	0	.086677609	.086677609
4:00 PM- 5:00 PM	4,005	875	.103686559	0	.103686559	.103686559
4:00 PM- 5:00 PM	3,245	900	.06074625	0	.06074625	.06074625

4:00 PM- 5:00 PM	2,501	925	.026359013	0	.026359013	.026359013
4:00 PM- 5:00 PM	1,774	950	.031490856	0	.031490856	.031490856
4:00 PM- 5:00 PM	1,062	975	.00437373	0	.00437373	.00437373
4:00 PM- 5:00 PM	364	1000	.052445882	0	.052445882	.052445882
5:00 PM – 6:00 PM	52,947	100	.177242978	0	.177242978	.177242978
5:00 PM – 6:00 PM	48,448	125	.130764808	0	.130764808	.130764808
5:00 PM – 6:00 PM	44,073	150	.044592607	0	.044592607	.044592607
5:00 PM – 6:00 PM	41,074	175	.039013672	0	.039013672	.039013672
5:00 PM – 6:00 PM	38,623	200	.114008562	0	.114008562	.114008562
5:00 PM – 6:00 PM	36,498	225	.170108939	0	.170108939	.170108939
5:00 PM – 6:00 PM	34,015	250	.077813516	0	.077813516	.077813516
5:00 PM – 6:00 PM	31,975	275	.050657513	0	.050657513	.050657513
5:00 PM – 6:00 PM	30,080	300	.035592443	0	.035592443	.035592443
5:00 PM – 6:00 PM	28,308	325	.024609521	0	.024609521	.024609521
5:00 PM – 6:00 PM	26,644	350	.005889956	0	.005889956	.005889956
5:00 PM – 6:00 PM	25,074	375	.053728843	0	.053728843	.053728843
5:00 PM – 6:00 PM	23,586	400	.002118829	0	.002118829	.002118829
5:00 PM – 6:00 PM	22,171	425	.01393762	0	.01393762	.01393762
5:00 PM – 6:00 PM	20,823	450	.173763433	0	.173763433	.173763433
5:00 PM – 6:00 PM	19,533	475	.141495025	0	.141495025	.141495025
5:00 PM – 6:00 PM	18,298	500	.102792374	0	.102792374	.102792374
5:00 PM – 6:00 PM	17,112	525	.129054193	0	.129054193	.129054193
5:00 PM – 6:00 PM	15,970	550	.048810827	0	.048810827	.048810827
5:00 PM – 6:00 PM	14,870	575	.085355771	0	.085355771	.085355771
5:00 PM – 6:00 PM	13,808	600	.084170004	0	.084170004	.084170004
5:00 PM – 6:00 PM	12,781	625	.030577232	0	.030577232	.030577232
5:00 PM – 6:00 PM	11,786	650	.030363406	0	.030363406	.030363406
5:00 PM – 6:00 PM	10,823	675	.006764702	0	.006764702	.006764702
5:00 PM – 6:00 PM	9,888	700	.028380648	0	.028380648	.028380648
5:00 PM – 6:00 PM	8,979	725	.045292404	0	.045292404	.045292404
5:00 PM – 6:00 PM	8,095	750	.053165118	0	.053165118	.053165118
5:00 PM – 6:00 PM	7,235	775	.036642138	0	.036642138	.036642138
5:00 PM – 6:00 PM	6,398	800	.026670034	0	.026670034	.026670034
5:00 PM – 6:00 PM	5,581	825	.008067102	0	.008067102	.008067102
5:00 PM – 6:00 PM	4,784	850	.052193178	0	.052193178	.052193178
5:00 PM – 6:00 PM	4,005	875	.043465157	0	.043465157	.043465157
5:00 PM – 6:00 PM	3,245	900	.000233266	0	.000233266	.000233266
5:00 PM – 6:00 PM	2,501	925	.086891436	0	.086891436	.086891436
5:00 PM – 6:00 PM	1,774	950	.050346492	0	.050346492	.050346492
5:00 PM – 6:00 PM	1,062	975	.026864422	0	.026864422	.026864422
5:00 PM – 6:00 PM	364	1000	.112142437	0	.112142437	.112142437
6:00 PM – 7:00 PM	52,947	100	.124544392	0	.124544392	.124544392
6:00 PM – 7:00 PM	48,448	125	.021752017	0	.021752017	.021752017
6:00 PM – 7:00 PM	44,073	150	.004606996	0	.004606996	.004606996
6:00 PM – 7:00 PM	41,074	175	.050599196	0	.050599196	.050599196
6:00 PM – 7:00 PM	38,623	200	.125088678	0	.125088678	.125088678
6:00 PM – 7:00 PM	36,498	225	.127557406	0	.127557406	.127557406
6:00 PM – 7:00 PM	34,015	250	.299260326	0	.299260326	.299260326
6:00 PM – 7:00 PM	31,975	275	.433601873	0	.433601873	.433601873
6:00 PM – 7:00 PM	30,080	300	.168864856	0	.168864856	.168864856
6:00 PM – 7:00 PM	28,308	325	.226034366	0	.226034366	.226034366
6:00 PM – 7:00 PM	26,644	350	.247164342	0	.247164342	.247164342
6:00 PM – 7:00 PM	25,074	375	.40432704	0	.40432704	.40432704

6:00 PM – 7:00 PM	23,586	400	.264328802	0	.264328802	.264328802
6:00 PM – 7:00 PM	22,171	425	.1166328	0	.1166328	.1166328
6:00 PM – 7:00 PM	20,823	450	.088796438	0	.088796438	.088796438
6:00 PM – 7:00 PM	19,533	475	.037672394	0	.037672394	.037672394
6:00 PM – 7:00 PM	18,298	500	.174210526	0	.174210526	.174210526
6:00 PM – 7:00 PM	17,112	525	.205021024	0	.205021024	.205021024
6:00 PM – 7:00 PM	15,970	550	.072934378	0	.072934378	.072934378
6:00 PM – 7:00 PM	14,870	575	.201424846	0	.201424846	.201424846
6:00 PM – 7:00 PM	13,808	600	.19730382	0	.19730382	.19730382
6:00 PM – 7:00 PM	12,781	625	.153294377	0	.153294377	.153294377
6:00 PM – 7:00 PM	11,786	650	.103220028	0	.103220028	.103220028
6:00 PM – 7:00 PM	10,823	675	.136343743	0	.136343743	.136343743
6:00 PM – 7:00 PM	9,888	700	.14157278	0	.14157278	.14157278
6:00 PM – 7:00 PM	8,979	725	.169370264	0	.169370264	.169370264
6:00 PM – 7:00 PM	8,095	750	.122250613	0	.122250613	.122250613
6:00 PM – 7:00 PM	7,235	775	.105436051	0	.105436051	.105436051
6:00 PM – 7:00 PM	6,398	800	.085763986	0	.085763986	.085763986
6:00 PM – 7:00 PM	5,581	825	.016095326	0	.016095326	.016095326
6:00 PM – 7:00 PM	4,784	850	.009447257	0	.009447257	.009447257
6:00 PM – 7:00 PM	4,005	875	.026106308	0	.026106308	.026106308
6:00 PM – 7:00 PM	3,245	900	.060512984	0	.060512984	.060512984
6:00 PM – 7:00 PM	2,501	925	.041773981	0	.041773981	.041773981
6:00 PM – 7:00 PM	1,774	950	.073284276	0	.073284276	.073284276
6:00 PM – 7:00 PM	1,062	975	.076005708	0	.076005708	.076005708
6:00 PM – 7:00 PM	364	1000	.107088349	0	.107088349	.107088349
7:00 PM – 8: 00 PM	52,947	100	.036817087	0	.036817087	.036817087
7:00 PM – 8: 00 PM	48,448	125	.111831416	0	.111831416	.111831416
7:00 PM – 8: 00 PM	44,073	150	.017378287	0	.017378287	.017378287
7:00 PM – 8: 00 PM	41,074	175	.003751688	0	.003751688	.003751688
7:00 PM – 8: 00 PM	38,623	200	.050074349	0	.050074349	.050074349
7:00 PM – 8: 00 PM	36,498	225	.019030585	0	.019030585	.019030585
7:00 PM – 8: 00 PM	34,015	250	.10366712	0	.10366712	.10366712
7:00 PM – 8: 00 PM	31,975	275	.267011357	0	.267011357	.267011357
7:00 PM – 8: 00 PM	30,080	300	.097777164	0	.097777164	.097777164
7:00 PM – 8: 00 PM	28,308	325	.028361209	0	.028361209	.028361209
7:00 PM – 8: 00 PM	26,644	350	.04212388	0	.04212388	.04212388
7:00 PM – 8: 00 PM	25,074	375	.024492888	0	.024492888	.024492888
7:00 PM – 8: 00 PM	23,586	400	.16587128	0	.16587128	.16587128
7:00 PM – 8: 00 PM	22,171	425	.376762822	0	.376762822	.376762822
7:00 PM – 8: 00 PM	20,823	450	.373905318	0	.373905318	.373905318
7:00 PM – 8: 00 PM	19,533	475	.165054851	0	.165054851	.165054851
7:00 PM – 8: 00 PM	18,298	500	.164510564	0	.164510564	.164510564
7:00 PM – 8: 00 PM	17,112	525	.334444554	0	.334444554	.334444554
7:00 PM – 8: 00 PM	15,970	550	.229066819	0	.229066819	.229066819
7:00 PM – 8: 00 PM	14,870	575	.062962273	0	.062962273	.062962273
7:00 PM – 8: 00 PM	13,808	600	.118032394	0	.118032394	.118032394
7:00 PM – 8: 00 PM	12,781	625	.084928117	0	.084928117	.084928117
7:00 PM – 8: 00 PM	11,786	650	.066072481	0	.066072481	.066072481
7:00 PM – 8: 00 PM	10,823	675	.07969908	0	.07969908	.07969908
7:00 PM – 8: 00 PM	9,888	700	.1299095	0	.1299095	.1299095
7:00 PM – 8: 00 PM	8,979	725	.186009877	0	.186009877	.186009877
7:00 PM – 8: 00 PM	8,095	750	.132436544	0	.132436544	.132436544
7:00 PM – 8: 00 PM	7,235	775	.068755036	0	.068755036	.068755036

7:00 PM – 8: 00 PM	6,398	800	.057266705	0	.057266705	.057266705
7:00 PM – 8: 00 PM	5,581	825	.056547469	0	.056547469	.056547469
7:00 PM – 8: 00 PM	4,784	850	.050093788	0	.050093788	.050093788
7:00 PM – 8: 00 PM	4,005	875	.000427654	0	.000427654	.000427654
7:00 PM – 8: 00 PM	3,245	900	.035203667	0	.035203667	.035203667
7:00 PM – 8: 00 PM	2,501	925	.007425622	0	.007425622	.007425622
7:00 PM – 8: 00 PM	1,774	950	.02672835	0	.02672835	.02672835
7:00 PM – 8: 00 PM	1,062	975	.004626434	0	.004626434	.004626434
7:00 PM – 8: 00 PM	364	1000	.083509085	0	.083509085	.083509085
8:00 PM – 9:00 PM	52,947	100	.07240953	0	.07240953	.07240953
8:00 PM – 9:00 PM	48,448	125	.037147547	0	.037147547	.037147547
8:00 PM – 9:00 PM	44,073	150	.066130798	0	.066130798	.066130798
8:00 PM – 9:00 PM	41,074	175	.044961944	0	.044961944	.044961944
8:00 PM – 9:00 PM	38,623	200	.102228649	0	.102228649	.102228649
8:00 PM – 9:00 PM	36,498	225	.023773652	0	.023773652	.023773652
8:00 PM – 9:00 PM	34,015	250	.177690071	0	.177690071	.177690071
8:00 PM – 9:00 PM	31,975	275	.254240065	0	.254240065	.254240065
8:00 PM – 9:00 PM	30,080	300	.429383653	0	.429383653	.429383653
8:00 PM – 9:00 PM	28,308	325	.26631156	0	.26631156	.26631156
8:00 PM – 9:00 PM	26,644	350	.145343908	0	.145343908	.145343908
8:00 PM – 9:00 PM	25,074	375	.130862002	0	.130862002	.130862002
8:00 PM – 9:00 PM	23,586	400	.195943104	0	.195943104	.195943104
8:00 PM – 9:00 PM	22,171	425	.109518199	0	.109518199	.109518199
8:00 PM – 9:00 PM	20,823	450	.064225795	0	.064225795	.064225795
8:00 PM – 9:00 PM	19,533	475	.084850362	0	.084850362	.084850362
8:00 PM – 9:00 PM	18,298	500	.140717473	0	.140717473	.140717473
8:00 PM – 9:00 PM	17,112	525	.144469162	0	.144469162	.144469162
8:00 PM – 9:00 PM	15,970	550	.095152926	0	.095152926	.095152926
8:00 PM – 9:00 PM	14,870	575	.080534948	0	.080534948	.080534948
8:00 PM – 9:00 PM	13,808	600	.005442864	0	.005442864	.005442864
8:00 PM – 9:00 PM	12,781	625	.147812635	0	.147812635	.147812635
8:00 PM – 9:00 PM	11,786	650	.11824622	0	.11824622	.11824622
8:00 PM – 9:00 PM	10,823	675	.081176429	0	.081176429	.081176429
8:00 PM – 9:00 PM	9,888	700	.06138773	0	.06138773	.06138773
8:00 PM – 9:00 PM	8,979	725	.017767063	0	.017767063	.017767063
8:00 PM – 9:00 PM	8,095	750	.008494756	0	.008494756	.008494756
8:00 PM – 9:00 PM	7,235	775	.00907792	0	.00907792	.00907792
8:00 PM – 9:00 PM	6,398	800	.033823512	0	.033823512	.033823512
8:00 PM – 9:00 PM	5,581	825	.0097194	0	.0097194	.0097194
8:00 PM – 9:00 PM	4,784	850	.043426279	0	.043426279	.043426279
8:00 PM – 9:00 PM	4,005	875	.05166833	0	.05166833	.05166833
8:00 PM – 9:00 PM	3,245	900	.06900774	0	.06900774	.06900774
8:00 PM – 9:00 PM	2,501	925	.007425622	0	.007425622	.007425622
8:00 PM – 9:00 PM	1,774	950	.016600735	0	.016600735	.016600735
8:00 PM – 9:00 PM	1,062	975	.075714126	0	.075714126	.075714126
8:00 PM – 9:00 PM	364	1000	.022976662	0	.022976662	.022976662
9:00 PM – 10:00 PM	52,947	100	.126468833	0	.126468833	.126468833
9:00 PM – 10:00 PM	48,448	125	.014034814	0	.014034814	.014034814
9:00 PM – 10:00 PM	44,073	150	.044592607	0	.044592607	.044592607
9:00 PM – 10:00 PM	41,074	175	.020857832	0	.020857832	.020857832
9:00 PM – 10:00 PM	38,623	200	.051221238	0	.051221238	.051221238
9:00 PM – 10:00 PM	36,498	225	.330673427	0	.330673427	.330673427
9:00 PM – 10:00 PM	34,015	250	.036428311	0	.036428311	.036428311

9:00 PM – 10:00 PM	31,975	275	.048033275	0	.048033275	.048033275
9:00 PM – 10:00 PM	30,080	300	.047372356	0	.047372356	.047372356
9:00 PM – 10:00 PM	28,308	325	.163791329	0	.163791329	.163791329
9:00 PM – 10:00 PM	26,644	350	.11420295	0	.11420295	.11420295
9:00 PM – 10:00 PM	25,074	375	.031899071	0	.031899071	.031899071
9:00 PM – 10:00 PM	23,586	400	.030557794	0	.030557794	.030557794
9:00 PM – 10:00 PM	22,171	425	.157765301	0	.157765301	.157765301
9:00 PM – 10:00 PM	20,823	450	.263978904	0	.263978904	.263978904
9:00 PM – 10:00 PM	19,533	475	.356041061	0	.356041061	.356041061
9:00 PM – 10:00 PM	18,298	500	.302253901	0	.302253901	.302253901
9:00 PM – 10:00 PM	17,112	525	.204476737	0	.204476737	.204476737
9:00 PM – 10:00 PM	15,970	550	.043076381	0	.043076381	.043076381
9:00 PM – 10:00 PM	14,870	575	.031996265	0	.031996265	.031996265
9:00 PM – 10:00 PM	13,808	600	.024803909	0	.024803909	.024803909
9:00 PM – 10:00 PM	12,781	625	.092878586	0	.092878586	.092878586
9:00 PM – 10:00 PM	11,786	650	.127421334	0	.127421334	.127421334
9:00 PM – 10:00 PM	10,823	675	.084908678	0	.084908678	.084908678
9:00 PM – 10:00 PM	9,888	700	.054156497	0	.054156497	.054156497
9:00 PM – 10:00 PM	8,979	725	.098029868	0	.098029868	.098029868
9:00 PM – 10:00 PM	8,095	750	.190908455	0	.190908455	.190908455
9:00 PM – 10:00 PM	7,235	775	.187487226	0	.187487226	.187487226
9:00 PM – 10:00 PM	6,398	800	.090915268	0	.090915268	.090915268
9:00 PM – 10:00 PM	5,581	825	.090370981	0	.090370981	.090370981
9:00 PM – 10:00 PM	4,784	850	.084928117	0	.084928117	.084928117
9:00 PM – 10:00 PM	4,005	875	.081720715	0	.081720715	.081720715
9:00 PM – 10:00 PM	3,245	900	.013023996	0	.013023996	.013023996
9:00 PM – 10:00 PM	2,501	925	.051415626	0	.051415626	.051415626
9:00 PM – 10:00 PM	1,774	950	.018700126	0	.018700126	.018700126
9:00 PM – 10:00 PM	1,062	975	.004723628	0	.004723628	.004723628
9:00 PM – 10:00 PM	364	1000	.02964417	0	.02964417	.02964417
10:00 PM – 11:00 PM	52,947	100	.051162922	0	.051162922	.051162922
10:00 PM – 11:00 PM	48,448	125	.023112733	0	.023112733	.023112733
10:00 PM – 11:00 PM	44,073	150	.06593641	0	.06593641	.06593641
10:00 PM – 11:00 PM	41,074	175	.067452636	0	.067452636	.067452636
10:00 PM – 11:00 PM	38,623	200	.123514135	0	.123514135	.123514135
10:00 PM – 11:00 PM	36,498	225	.136674203	0	.136674203	.136674203
10:00 PM – 11:00 PM	34,015	250	.128354396	0	.128354396	.128354396
10:00 PM – 11:00 PM	31,975	275	.575291286	0	.575291286	.575291286
10:00 PM – 11:00 PM	30,080	300	.482198873	0	.482198873	.482198873
10:00 PM – 11:00 PM	28,308	325	.167095925	0	.167095925	.167095925
10:00 PM – 11:00 PM	26,644	350	.071320957	0	.071320957	.071320957
10:00 PM – 11:00 PM	25,074	375	.024823348	0	.024823348	.024823348
10:00 PM – 11:00 PM	23,586	400	.059055074	0	.059055074	.059055074
10:00 PM – 11:00 PM	22,171	425	.16021459	0	.16021459	.16021459
10:00 PM – 11:00 PM	20,823	450	.173199708	0	.173199708	.173199708
10:00 PM – 11:00 PM	19,533	475	.134788639	0	.134788639	.134788639
10:00 PM – 11:00 PM	18,298	500	.047022457	0	.047022457	.047022457
10:00 PM – 11:00 PM	17,112	525	.062981712	0	.062981712	.062981712
10:00 PM – 11:00 PM	15,970	550	.118790507	0	.118790507	.118790507
10:00 PM – 11:00 PM	14,870	575	.100070942	0	.100070942	.100070942
10:00 PM – 11:00 PM	13,808	600	.067958045	0	.067958045	.067958045
10:00 PM – 11:00 PM	12,781	625	.086288833	0	.086288833	.086288833
10:00 PM – 11:00 PM	11,786	650	.047741693	0	.047741693	.047741693

10:00 PM – 11:00 PM	10,823	675	.074975452	0	.074975452	.074975452
10:00 PM – 11:00 PM	9,888	700	.068638403	0	.068638403	.068638403
10:00 PM – 11:00 PM	8,979	725	.08829103	0	.08829103	.08829103
10:00 PM – 11:00 PM	8,095	750	.086483221	0	.086483221	.086483221
10:00 PM – 11:00 PM	7,235	775	.04340684	0	.04340684	.04340684
10:00 PM – 11:00 PM	6,398	800	.016697929	0	.016697929	.016697929
10:00 PM – 11:00 PM	5,581	825	.026708911	0	.026708911	.026708911
10:00 PM – 11:00 PM	4,784	850	.017145022	0	.017145022	.017145022
10:00 PM – 11:00 PM	4,005	875	.083275819	0	.083275819	.083275819
10:00 PM – 11:00 PM	3,245	900	.042162757	0	.042162757	.042162757
10:00 PM – 11:00 PM	2,501	925	.147035083	0	.147035083	.147035083
10:00 PM – 11:00 PM	1,774	950	.000777552	0	.000777552	.000777552
10:00 PM – 11:00 PM	1,062	975	.069357638	0	.069357638	.069357638
10:00 PM – 11:00 PM	364	1000	.047761132	0	.047761132	.047761132
11:00 PM – 12:00 AM	52,947	100	.13688803	0	.13688803	.13688803
11:00 PM – 12:00 AM	48,448	125	.153935857	0	.153935857	.153935857
11:00 PM – 12:00 AM	44,073	150	.070757232	0	.070757232	.070757232
11:00 PM – 12:00 AM	41,074	175	.032287847	0	.032287847	.032287847
11:00 PM – 12:00 AM	38,623	200	.010244248	0	.010244248	.010244248
11:00 PM – 12:00 AM	36,498	225	.028302893	0	.028302893	.028302893
11:00 PM – 12:00 AM	34,015	250	.292320674	0	.292320674	.292320674
11:00 PM – 12:00 AM	31,975	275	.491821079	0	.491821079	.491821079
11:00 PM – 12:00 AM	30,080	300	.547785384	0	.547785384	.547785384
11:00 PM – 12:00 AM	28,308	325	.169622969	0	.169622969	.169622969
11:00 PM – 12:00 AM	26,644	350	.080146172	0	.080146172	.080146172
11:00 PM – 12:00 AM	25,074	375	.014598539	0	.014598539	.014598539
11:00 PM – 12:00 AM	23,586	400	.072137387	0	.072137387	.072137387
11:00 PM – 12:00 AM	22,171	425	.05087134	0	.05087134	.05087134
11:00 PM – 12:00 AM	20,823	450	.050521441	0	.050521441	.050521441
11:00 PM – 12:00 AM	19,533	475	.033823512	0	.033823512	.033823512
11:00 PM – 12:00 AM	18,298	500	.036233923	0	.036233923	.036233923
11:00 PM – 12:00 AM	17,112	525	.038313875	0	.038313875	.038313875
11:00 PM – 12:00 AM	15,970	550	.049957716	0	.049957716	.049957716
11:00 PM – 12:00 AM	14,870	575	.006706386	0	.006706386	.006706386
11:00 PM – 12:00 AM	13,808	600	.061465486	0	.061465486	.061465486
11:00 PM – 12:00 AM	12,781	625	.036622699	0	.036622699	.036622699
11:00 PM – 12:00 AM	11,786	650	.006706386	0	.006706386	.006706386
11:00 PM – 12:00 AM	10,823	675	0	0	0	0
11:00 PM – 12:00 AM	9,888	700	0	0	0	0
11:00 PM – 12:00 AM	8,979	725	.02721432	0	.02721432	.02721432
11:00 PM – 12:00 AM	8,095	750	.043018064	0	.043018064	.043018064
11:00 PM – 12:00 AM	7,235	775	.033784634	0	.033784634	.033784634
11:00 PM – 12:00 AM	6,398	800	.006686947	0	.006686947	.006686947
11:00 PM – 12:00 AM	5,581	825	.066169675	0	.066169675	.066169675
11:00 PM – 12:00 AM	4,784	850	.097602215	0	.097602215	.097602215
11:00 PM – 12:00 AM	4,005	875	.133913893	0	.133913893	.133913893
11:00 PM – 12:00 AM	3,245	900	.31797989	0	.31797989	.31797989
11:00 PM – 12:00 AM	2,501	925	.242071376	0	.242071376	.242071376
11:00 PM – 12:00 AM	1,774	950	.166104546	0	.166104546	.166104546
11:00 PM – 12:00 AM	1,062	975	.13218384	0	.13218384	.13218384
11:00 PM – 12:00 AM	364	1000	.004393169	0	.004393169	.004393169

**Table B-6: Statistical Results for Wind Speed Deviation Values Grouped by Altitude and Hour for
5/27/99**

The table shown below displays the statistical results for wind speed deviations grouped first by altitude then by hour for May 27, 1999 for the time span of 9:00 AM until 1:00 AM.

Comparison Hour on 5/27/99	Altitude (Ft)	Pressure (Mb)	Average Deviation (Knots)	Standard Deviation (Knots)	Max. Deviation (Knots)	Min. Deviation (Knots)
9:00 AM – 10:00 AM	52,947	100	.074722747	0	.074722747	.074722747
9:00 AM – 10:00 AM	48,448	125	.077580251	0	.077580251	.077580251
9:00 AM – 10:00 AM	44,073	150	.098204818	0	.098204818	.098204818
9:00 AM – 10:00 AM	41,074	175	.21269935	0	.21269935	.21269935
9:00 AM – 10:00 AM	38,623	200	.078902089	0	.078902089	.078902089
9:00 AM – 10:00 AM	36,498	225	.002876942	0	.002876942	.002876942
9:00 AM – 10:00 AM	34,015	250	.134672006	0	.134672006	.134672006
9:00 AM – 10:00 AM	31,975	275	.415135013	0	.415135013	.415135013
9:00 AM – 10:00 AM	30,080	300	.379484254	0	.379484254	.379484254
9:00 AM – 10:00 AM	28,308	325	.230174831	0	.230174831	.230174831
9:00 AM – 10:00 AM	26,644	350	.156287952	0	.156287952	.156287952
9:00 AM – 10:00 AM	25,074	375	.11095667	0	.11095667	.11095667
9:00 AM – 10:00 AM	23,586	400	.012265883	0	.012265883	.012265883
9:00 AM – 10:00 AM	22,171	425	.033162593	0	.033162593	.033162593
9:00 AM – 10:00 AM	20,823	450	.070601722	0	.070601722	.070601722
9:00 AM – 10:00 AM	19,533	475	.041871175	0	.041871175	.041871175
9:00 AM – 10:00 AM	18,298	500	.02931371	0	.02931371	.02931371
9:00 AM – 10:00 AM	17,112	525	.005326231	0	.005326231	.005326231
9:00 AM – 10:00 AM	15,970	550	.042337706	0	.042337706	.042337706
9:00 AM – 10:00 AM	14,870	575	.080146172	0	.080146172	.080146172
9:00 AM – 10:00 AM	13,808	600	.111423202	0	.111423202	.111423202
9:00 AM – 10:00 AM	12,781	625	.067530391	0	.067530391	.067530391
9:00 AM – 10:00 AM	11,786	650	.080418316	0	.080418316	.080418316
9:00 AM – 10:00 AM	10,823	675	.095114048	0	.095114048	.095114048
9:00 AM – 10:00 AM	9,888	700	.118323976	0	.118323976	.118323976
9:00 AM – 10:00 AM	8,979	725	.120481682	0	.120481682	.120481682
9:00 AM – 10:00 AM	8,095	750	.089885011	0	.089885011	.089885011
9:00 AM – 10:00 AM	7,235	775	.129345775	0	.129345775	.129345775
9:00 AM – 10:00 AM	6,398	800	.094939099	0	.094939099	.094939099
9:00 AM – 10:00 AM	5,581	825	.062767885	0	.062767885	.062767885
9:00 AM – 10:00 AM	4,784	850	.079290865	0	.079290865	.079290865
9:00 AM – 10:00 AM	4,005	875	.039499642	0	.039499642	.039499642
9:00 AM – 10:00 AM	3,245	900	.129034754	0	.129034754	.129034754
9:00 AM – 10:00 AM	2,501	925	.123902911	0	.123902911	.123902911
9:00 AM – 10:00 AM	1,774	950	.063156661	0	.063156661	.063156661
9:00 AM – 10:00 AM	1,062	975	.04601164	0	.04601164	.04601164
9:00 AM – 10:00 AM	364	1000	.04616715	0	.04616715	.04616715
10:00 AM – 11:00 AM	52,947	100	.010944044	0	.010944044	.010944044
10:00 AM – 11:00 AM	48,448	125	.019613749	0	.019613749	.019613749
10:00 AM – 11:00 AM	44,073	150	.117196525	0	.117196525	.117196525
10:00 AM – 11:00 AM	41,074	175	.206090158	0	.206090158	.206090158
10:00 AM – 11:00 AM	38,623	200	.347079774	0	.347079774	.347079774
10:00 AM – 11:00 AM	36,498	225	.107671513	0	.107671513	.107671513

10:00 AM – 11:00 AM	34,015	250	.027253198	0	.027253198	.027253198
10:00 AM – 11:00 AM	31,975	275	.106816206	0	.106816206	.106816206
10:00 AM – 11:00 AM	30,080	300	.03353193	0	.03353193	.03353193
10:00 AM – 11:00 AM	28,308	325	.114727798	0	.114727798	.114727798
10:00 AM – 11:00 AM	26,644	350	.195321062	0	.195321062	.195321062
10:00 AM – 11:00 AM	25,074	375	.291679194	0	.291679194	.291679194
10:00 AM – 11:00 AM	23,586	400	.248408425	0	.248408425	.248408425
10:00 AM – 11:00 AM	22,171	425	.036972598	0	.036972598	.036972598
10:00 AM – 11:00 AM	20,823	450	.006123222	0	.006123222	.006123222
10:00 AM – 11:00 AM	19,533	475	.012071495	0	.012071495	.012071495
10:00 AM – 11:00 AM	18,298	500	.024026357	0	.024026357	.024026357
10:00 AM – 11:00 AM	17,112	525	.005326231	0	.005326231	.005326231
10:00 AM – 11:00 AM	15,970	550	.019127779	0	.019127779	.019127779
10:00 AM – 11:00 AM	14,870	575	.000174949	0	.000174949	.000174949
10:00 AM – 11:00 AM	13,808	600	.024395694	0	.024395694	.024395694
10:00 AM – 11:00 AM	12,781	625	.03125759	0	.03125759	.03125759
10:00 AM – 11:00 AM	11,786	650	.018019768	0	.018019768	.018019768
10:00 AM – 11:00 AM	10,823	675	.007872714	0	.007872714	.007872714
10:00 AM – 11:00 AM	9,888	700	.001030256	0	.001030256	.001030256
10:00 AM – 11:00 AM	8,979	725	.009136236	0	.009136236	.009136236
10:00 AM – 11:00 AM	8,095	750	.004237658	0	.004237658	.004237658
10:00 AM – 11:00 AM	7,235	775	.070076874	0	.070076874	.070076874
10:00 AM – 11:00 AM	6,398	800	.135663385	0	.135663385	.135663385
10:00 AM – 11:00 AM	5,581	825	.050560319	0	.050560319	.050560319
10:00 AM – 11:00 AM	4,784	850	.094375374	0	.094375374	.094375374
10:00 AM – 11:00 AM	4,005	875	.133758383	0	.133758383	.133758383
10:00 AM – 11:00 AM	3,245	900	.119179283	0	.119179283	.119179283
10:00 AM – 11:00 AM	2,501	925	.02542595	0	.02542595	.02542595
10:00 AM – 11:00 AM	1,774	950	.058024818	0	.058024818	.058024818
10:00 AM – 11:00 AM	1,062	975	.114572287	0	.114572287	.114572287
10:00 AM – 11:00 AM	364	1000	.164082911	0	.164082911	.164082911
11:00 AM – 12:00 PM	52,947	100	.010555268	0	.010555268	.010555268
11:00 AM – 12:00 PM	48,448	125	.0583164	0	.0583164	.0583164
11:00 AM – 12:00 PM	44,073	150	.020391301	0	.020391301	.020391301
11:00 AM – 12:00 PM	41,074	175	.167484701	0	.167484701	.167484701
11:00 AM – 12:00 PM	38,623	200	.19454351	0	.19454351	.19454351
11:00 AM – 12:00 PM	36,498	225	.130473226	0	.130473226	.130473226
11:00 AM – 12:00 PM	34,015	250	.283203877	0	.283203877	.283203877
11:00 AM – 12:00 PM	31,975	275	.315472285	0	.315472285	.315472285
11:00 AM – 12:00 PM	30,080	300	.36253362	0	.36253362	.36253362
11:00 AM – 12:00 PM	28,308	325	.164860463	0	.164860463	.164860463
11:00 AM – 12:00 PM	26,644	350	.195321062	0	.195321062	.195321062
11:00 AM – 12:00 PM	25,074	375	.193921469	0	.193921469	.193921469
11:00 AM – 12:00 PM	23,586	400	.055303386	0	.055303386	.055303386
11:00 AM – 12:00 PM	22,171	425	.070368456	0	.070368456	.070368456
11:00 AM – 12:00 PM	20,823	450	.003537862	0	.003537862	.003537862
11:00 AM – 12:00 PM	19,533	475	.088349346	0	.088349346	.088349346
11:00 AM – 12:00 PM	18,298	500	.11453341	0	.11453341	.11453341
11:00 AM – 12:00 PM	17,112	525	.184707478	0	.184707478	.184707478
11:00 AM – 12:00 PM	15,970	550	.128918122	0	.128918122	.128918122
11:00 AM – 12:00 PM	14,870	575	.055458896	0	.055458896	.055458896
11:00 AM – 12:00 PM	13,808	600	.000447092	0	.000447092	.000447092
11:00 AM – 12:00 PM	12,781	625	.08665817	0	.08665817	.08665817

11:00 AM – 12:00 PM	11,786	650	.161361479	0	.161361479	.161361479
11:00 AM – 12:00 PM	10,823	675	.214235015	0	.214235015	.214235015
11:00 AM – 12:00 PM	9,888	700	.199267139	0	.199267139	.199267139
11:00 AM – 12:00 PM	8,979	725	.066811156	0	.066811156	.066811156
11:00 AM – 12:00 PM	8,095	750	.061096148	0	.061096148	.061096148
11:00 AM – 12:00 PM	7,235	775	.087202457	0	.087202457	.087202457
11:00 AM – 12:00 PM	6,398	800	.323636581	0	.323636581	.323636581
11:00 AM – 12:00 PM	5,581	825	.245959136	0	.245959136	.245959136
11:00 AM – 12:00 PM	4,784	850	.117876883	0	.117876883	.117876883
11:00 AM – 12:00 PM	4,005	875	.083314697	0	.083314697	.083314697
11:00 AM – 12:00 PM	3,245	900	.092353739	0	.092353739	.092353739
11:00 AM – 12:00 PM	2,501	925	.241954744	0	.241954744	.241954744
11:00 AM – 12:00 PM	1,774	950	.08179847	0	.08179847	.08179847
11:00 AM – 12:00 PM	1,062	975	.049530062	0	.049530062	.049530062
11:00 AM – 12:00 PM	364	1000	.010263686	0	.010263686	.010263686
12:00 PM – 1:00 PM	52,947	100	.136149355	0	.136149355	.136149355
12:00 PM – 1:00 PM	48,448	125	.057441654	0	.057441654	.057441654
12:00 PM – 1:00 PM	44,073	150	.039480203	0	.039480203	.039480203
12:00 PM – 1:00 PM	41,074	175	.027836362	0	.027836362	.027836362
12:00 PM – 1:00 PM	38,623	200	.408195361	0	.408195361	.408195361
12:00 PM – 1:00 PM	36,498	225	.332189653	0	.332189653	.332189653
12:00 PM – 1:00 PM	34,015	250	.285361584	0	.285361584	.285361584
12:00 PM – 1:00 PM	31,975	275	.315316775	0	.315316775	.315316775
12:00 PM – 1:00 PM	30,080	300	.410061486	0	.410061486	.410061486
12:00 PM – 1:00 PM	28,308	325	.206148474	0	.206148474	.206148474
12:00 PM – 1:00 PM	26,644	350	.045389598	0	.045389598	.045389598
12:00 PM – 1:00 PM	25,074	375	.136285427	0	.136285427	.136285427
12:00 PM – 1:00 PM	23,586	400	.059541044	0	.059541044	.059541044
12:00 PM – 1:00 PM	22,171	425	.02672835	0	.02672835	.02672835
12:00 PM – 1:00 PM	20,823	450	.030693865	0	.030693865	.030693865
12:00 PM – 1:00 PM	19,533	475	.045817252	0	.045817252	.045817252
12:00 PM – 1:00 PM	18,298	500	.018758442	0	.018758442	.018758442
12:00 PM – 1:00 PM	17,112	525	.018505738	0	.018505738	.018505738
12:00 PM – 1:00 PM	15,970	550	.074081267	0	.074081267	.074081267
12:00 PM – 1:00 PM	14,870	575	.025134368	0	.025134368	.025134368
12:00 PM – 1:00 PM	13,808	600	.005928834	0	.005928834	.005928834
12:00 PM – 1:00 PM	12,781	625	.055497774	0	.055497774	.055497774
12:00 PM – 1:00 PM	11,786	650	.085258577	0	.085258577	.085258577
12:00 PM – 1:00 PM	10,823	675	.088368785	0	.088368785	.088368785
12:00 PM – 1:00 PM	9,888	700	.11517489	0	.11517489	.11517489
12:00 PM – 1:00 PM	8,979	725	.050813023	0	.050813023	.050813023
12:00 PM – 1:00 PM	8,095	750	.047974958	0	.047974958	.047974958
12:00 PM – 1:00 PM	7,235	775	.064595132	0	.064595132	.064595132
12:00 PM – 1:00 PM	6,398	800	.026922738	0	.026922738	.026922738
12:00 PM – 1:00 PM	5,581	825	.044184392	0	.044184392	.044184392
12:00 PM – 1:00 PM	4,784	850	.019477678	0	.019477678	.019477678
12:00 PM – 1:00 PM	4,005	875	.065353246	0	.065353246	.065353246
12:00 PM – 1:00 PM	3,245	900	.033395858	0	.033395858	.033395858
12:00 PM – 1:00 PM	2,501	925	.22937784	0	.22937784	.22937784
12:00 PM – 1:00 PM	1,774	950	.045136894	0	.045136894	.045136894
12:00 PM – 1:00 PM	1,062	975	.266661458	0	.266661458	.266661458
12:00 PM – 1:00 PM	364	1000	.370386895	0	.370386895	.370386895
1:00 PM – 2:00 PM	52,947	100	.025989676	0	.025989676	.025989676

1:00 PM – 2:00 PM	48,448	125	.002799187	0	.002799187	.002799187
1:00 PM – 2:00 PM	44,073	150	.021557629	0	.021557629	.021557629
1:00 PM – 2:00 PM	41,074	175	.008922409	0	.008922409	.008922409
1:00 PM – 2:00 PM	38,623	200	.077502496	0	.077502496	.077502496
1:00 PM – 2:00 PM	36,498	225	.343891811	0	.343891811	.343891811
1:00 PM – 2:00 PM	34,015	250	.219483491	0	.219483491	.219483491
1:00 PM – 2:00 PM	31,975	275	.170925368	0	.170925368	.170925368
1:00 PM – 2:00 PM	30,080	300	.11824622	0	.11824622	.11824622
1:00 PM – 2:00 PM	28,308	325	.115408156	0	.115408156	.115408156
1:00 PM – 2:00 PM	26,644	350	.085103066	0	.085103066	.085103066
1:00 PM – 2:00 PM	25,074	375	.024220745	0	.024220745	.024220745
1:00 PM – 2:00 PM	23,586	400	.053067924	0	.053067924	.053067924
1:00 PM – 2:00 PM	22,171	425	.05199879	0	.05199879	.05199879
1:00 PM – 2:00 PM	20,823	450	.08100148	0	.08100148	.08100148
1:00 PM – 2:00 PM	19,533	475	.130317715	0	.130317715	.130317715
1:00 PM – 2:00 PM	18,298	500	.11614683	0	.11614683	.11614683
1:00 PM – 2:00 PM	17,112	525	.09686354	0	.09686354	.09686354
1:00 PM – 2:00 PM	15,970	550	.120792703	0	.120792703	.120792703
1:00 PM – 2:00 PM	14,870	575	.124641586	0	.124641586	.124641586
1:00 PM – 2:00 PM	13,808	600	.012829608	0	.012829608	.012829608
1:00 PM – 2:00 PM	12,781	625	.000952501	0	.000952501	.000952501
1:00 PM – 2:00 PM	11,786	650	.029896874	0	.029896874	.029896874
1:00 PM – 2:00 PM	10,823	675	.003304596	0	.003304596	.003304596
1:00 PM – 2:00 PM	9,888	700	.079776835	0	.079776835	.079776835
1:00 PM – 2:00 PM	8,979	725	.026495084	0	.026495084	.026495084
1:00 PM – 2:00 PM	8,095	750	.021071659	0	.021071659	.021071659
1:00 PM – 2:00 PM	7,235	775	.037633517	0	.037633517	.037633517
1:00 PM – 2:00 PM	6,398	800	.15745428	0	.15745428	.15745428
1:00 PM – 2:00 PM	5,581	825	.193649326	0	.193649326	.193649326
1:00 PM – 2:00 PM	4,784	850	.076102902	0	.076102902	.076102902
1:00 PM – 2:00 PM	4,005	875	.19390203	0	.19390203	.19390203
1:00 PM – 2:00 PM	3,245	900	.252393379	0	.252393379	.252393379
1:00 PM – 2:00 PM	2,501	925	.066772278	0	.066772278	.066772278
1:00 PM – 2:00 PM	1,774	950	.126935364	0	.126935364	.126935364
1:00 PM – 2:00 PM	1,062	975	.145538296	0	.145538296	.145538296
1:00 PM – 2:00 PM	364	1000	.05718895	0	.05718895	.05718895
2:00 PM – 3:00 PM	52,947	100	.179497879	0	.179497879	.179497879
2:00 PM – 3:00 PM	48,448	125	.305480742	0	.305480742	.305480742
2:00 PM – 3:00 PM	44,073	150	.191394425	0	.191394425	.191394425
2:00 PM – 3:00 PM	41,074	175	.103083956	0	.103083956	.103083956
2:00 PM – 3:00 PM	38,623	200	.128334958	0	.128334958	.128334958
2:00 PM – 3:00 PM	36,498	225	.52791893	0	.52791893	.52791893
2:00 PM – 3:00 PM	34,015	250	.050813023	0	.050813023	.050813023
2:00 PM – 3:00 PM	31,975	275	.110548456	0	.110548456	.110548456
2:00 PM – 3:00 PM	30,080	300	.144255335	0	.144255335	.144255335
2:00 PM – 3:00 PM	28,308	325	.214390525	0	.214390525	.214390525
2:00 PM – 3:00 PM	26,644	350	.052037668	0	.052037668	.052037668
2:00 PM – 3:00 PM	25,074	375	.011741035	0	.011741035	.011741035
2:00 PM – 3:00 PM	23,586	400	.084364392	0	.084364392	.084364392
2:00 PM – 3:00 PM	22,171	425	.073789685	0	.073789685	.073789685
2:00 PM – 3:00 PM	20,823	450	.095911039	0	.095911039	.095911039
2:00 PM – 3:00 PM	19,533	475	.1153304	0	.1153304	.1153304
2:00 PM – 3:00 PM	18,298	500	.19114172	0	.19114172	.19114172

2:00 PM – 3:00 PM	17,112	525	.236609074	0	.236609074	.236609074
2:00 PM – 3:00 PM	15,970	550	.213088126	0	.213088126	.213088126
2:00 PM – 3:00 PM	14,870	575	.18045038	0	.18045038	.18045038
2:00 PM – 3:00 PM	13,808	600	.12571072	0	.12571072	.12571072
2:00 PM – 3:00 PM	12,781	625	.157279331	0	.157279331	.157279331
2:00 PM – 3:00 PM	11,786	650	.066130798	0	.066130798	.066130798
2:00 PM – 3:00 PM	10,823	675	.205934647	0	.205934647	.205934647
2:00 PM – 3:00 PM	9,888	700	.206809393	0	.206809393	.206809393
2:00 PM – 3:00 PM	8,979	725	.151933661	0	.151933661	.151933661
2:00 PM – 3:00 PM	8,095	750	.142408649	0	.142408649	.142408649
2:00 PM – 3:00 PM	7,235	775	.149639882	0	.149639882	.149639882
2:00 PM – 3:00 PM	6,398	800	.255503587	0	.255503587	.255503587
2:00 PM – 3:00 PM	5,581	825	.280210302	0	.280210302	.280210302
2:00 PM – 3:00 PM	4,784	850	.059579922	0	.059579922	.059579922
2:00 PM – 3:00 PM	4,005	875	.005365109	0	.005365109	.005365109
2:00 PM – 3:00 PM	3,245	900	.047586182	0	.047586182	.047586182
2:00 PM – 3:00 PM	2,501	925	.053087363	0	.053087363	.053087363
2:00 PM – 3:00 PM	1,774	950	.049666134	0	.049666134	.049666134
2:00 PM – 3:00 PM	1,062	975	.03222953	0	.03222953	.03222953
2:00 PM – 3:00 PM	364	1000	.079932346	0	.079932346	.079932346
3:00 PM – 4:00 PM	52,947	100	.151369936	0	.151369936	.151369936
3:00 PM – 4:00 PM	48,448	125	.071573662	0	.071573662	.071573662
3:00 PM – 4:00 PM	44,073	150	.255678536	0	.255678536	.255678536
3:00 PM – 4:00 PM	41,074	175	.132592055	0	.132592055	.132592055
3:00 PM – 4:00 PM	38,623	200	.183910487	0	.183910487	.183910487
3:00 PM – 4:00 PM	36,498	225	.422366246	0	.422366246	.422366246
3:00 PM – 4:00 PM	34,015	250	.241216069	0	.241216069	.241216069
3:00 PM – 4:00 PM	31,975	275	.216878692	0	.216878692	.216878692
3:00 PM – 4:00 PM	30,080	300	.57717685	0	.57717685	.57717685
3:00 PM – 4:00 PM	28,308	325	.536083226	0	.536083226	.536083226
3:00 PM – 4:00 PM	26,644	350	.283339949	0	.283339949	.283339949
3:00 PM – 4:00 PM	25,074	375	.123241992	0	.123241992	.123241992
3:00 PM – 4:00 PM	23,586	400	.083003676	0	.083003676	.083003676
3:00 PM – 4:00 PM	22,171	425	.097019051	0	.097019051	.097019051
3:00 PM – 4:00 PM	20,823	450	.130473226	0	.130473226	.130473226
3:00 PM – 4:00 PM	19,533	475	.146218654	0	.146218654	.146218654
3:00 PM – 4:00 PM	18,298	500	.093539506	0	.093539506	.093539506
3:00 PM – 4:00 PM	17,112	525	.032482235	0	.032482235	.032482235
3:00 PM – 4:00 PM	15,970	550	.034756574	0	.034756574	.034756574
3:00 PM – 4:00 PM	14,870	575	.03920806	0	.03920806	.03920806
3:00 PM – 4:00 PM	13,808	600	.014831804	0	.014831804	.014831804
3:00 PM – 4:00 PM	12,781	625	.01490956	0	.01490956	.01490956
3:00 PM – 4:00 PM	11,786	650	.008164296	0	.008164296	.008164296
3:00 PM – 4:00 PM	10,823	675	.061154465	0	.061154465	.061154465
3:00 PM – 4:00 PM	9,888	700	.080010101	0	.080010101	.080010101
3:00 PM – 4:00 PM	8,979	725	.1396289	0	.1396289	.1396289
3:00 PM – 4:00 PM	8,095	750	.143108446	0	.143108446	.143108446
3:00 PM – 4:00 PM	7,235	775	.053553894	0	.053553894	.053553894
3:00 PM – 4:00 PM	6,398	800	.010399758	0	.010399758	.010399758
3:00 PM – 4:00 PM	5,581	825	.121259234	0	.121259234	.121259234
3:00 PM – 4:00 PM	4,784	850	.068444015	0	.068444015	.068444015
3:00 PM – 4:00 PM	4,005	875	.002507605	0	.002507605	.002507605
3:00 PM – 4:00 PM	3,245	900	.029430343	0	.029430343	.029430343

3:00 PM – 4:00 PM	2,501	925	.025989676	0	.025989676	.025989676
3:00 PM – 4:00 PM	1,774	950	.033493052	0	.033493052	.033493052
3:00 PM – 4:00 PM	1,062	975	.010866289	0	.010866289	.010866289
3:00 PM – 4:00 PM	364	1000	.058433033	0	.058433033	.058433033
4:00 PM – 5:00 PM	No data	No data	No data	No data	No data	No data
5:00 PM – 6:00 PM	No data	No data	No data	No data	No data	No data
6:00 PM – 7:00 PM	52,947	100	.037244741	0	.037244741	.037244741
6:00 PM – 7:00 PM	48,448	125	.253443074	0	.253443074	.253443074
6:00 PM – 7:00 PM	44,073	150	.202260714	0	.202260714	.202260714
6:00 PM – 7:00 PM	41,074	175	.062068088	0	.062068088	.062068088
6:00 PM – 7:00 PM	38,623	200	.452962918	0	.452962918	.452962918
6:00 PM – 7:00 PM	36,498	225	.532350977	0	.532350977	.532350977
6:00 PM – 7:00 PM	34,015	250	.074878258	0	.074878258	.074878258
6:00 PM – 7:00 PM	31,975	275	.868311757	0	.868311757	.868311757
6:00 PM – 7:00 PM	30,080	300	.920193914	0	.920193914	.920193914
6:00 PM – 7:00 PM	28,308	325	.540748538	0	.540748538	.540748538
6:00 PM – 7:00 PM	26,644	350	.117293719	0	.117293719	.117293719
6:00 PM – 7:00 PM	25,074	375	.01409313	0	.01409313	.01409313
6:00 PM – 7:00 PM	23,586	400	.023501509	0	.023501509	.023501509
6:00 PM – 7:00 PM	22,171	425	.064361867	0	.064361867	.064361867
6:00 PM – 7:00 PM	20,823	450	.081098674	0	.081098674	.081098674
6:00 PM – 7:00 PM	19,533	475	.094180986	0	.094180986	.094180986
6:00 PM – 7:00 PM	18,298	500	.226053805	0	.226053805	.226053805
6:00 PM – 7:00 PM	17,112	525	.319418362	0	.319418362	.319418362
6:00 PM – 7:00 PM	15,970	550	.303186964	0	.303186964	.303186964
6:00 PM – 7:00 PM	14,870	575	.210561082	0	.210561082	.210561082
6:00 PM – 7:00 PM	13,808	600	.008825215	0	.008825215	.008825215
6:00 PM – 7:00 PM	12,781	625	.122406124	0	.122406124	.122406124
6:00 PM – 7:00 PM	11,786	650	.243237704	0	.243237704	.243237704
6:00 PM – 7:00 PM	10,823	675	.26955784	0	.26955784	.26955784
6:00 PM – 7:00 PM	9,888	700	.226170438	0	.226170438	.226170438
6:00 PM – 7:00 PM	8,979	725	.182646965	0	.182646965	.182646965
6:00 PM – 7:00 PM	8,095	750	.049044092	0	.049044092	.049044092
6:00 PM – 7:00 PM	7,235	775	.005442864	0	.005442864	.005442864
6:00 PM – 7:00 PM	6,398	800	.031704683	0	.031704683	.031704683
6:00 PM – 7:00 PM	5,581	825	.069863047	0	.069863047	.069863047
6:00 PM – 7:00 PM	4,784	850	.067841412	0	.067841412	.067841412
6:00 PM – 7:00 PM	4,005	875	.07759969	0	.07759969	.07759969
6:00 PM – 7:00 PM	3,245	900	.06609192	0	.06609192	.06609192
6:00 PM – 7:00 PM	2,501	925	.066966666	0	.066966666	.066966666
6:00 PM – 7:00 PM	1,774	950	.006784141	0	.006784141	.006784141
6:00 PM – 7:00 PM	1,062	975	.1130755	0	.1130755	.1130755
6:00 PM – 7:00 PM	364	1000	.156832238	0	.156832238	.156832238
7:00 PM – 8:00 PM	52,947	100	.03936357	0	.03936357	.03936357
7:00 PM – 8:00 PM	48,448	125	.188381411	0	.188381411	.188381411
7:00 PM – 8:00 PM	44,073	150	.15080621	0	.15080621	.15080621
7:00 PM – 8:00 PM	41,074	175	.229941565	0	.229941565	.229941565
7:00 PM – 8:00 PM	38,623	200	.358898564	0	.358898564	.358898564
7:00 PM – 8:00 PM	36,498	225	.034950962	0	.034950962	.034950962
7:00 PM – 8:00 PM	34,015	250	.397951114	0	.397951114	.397951114
7:00 PM – 8:00 PM	31,975	275	.236317492	0	.236317492	.236317492
7:00 PM – 8:00 PM	30,080	300	.202027448	0	.202027448	.202027448
7:00 PM – 8:00 PM	28,308	325	.086871997	0	.086871997	.086871997

7:00 PM – 8:00 PM	26,644	350	.147676564	0	.147676564	.147676564
7:00 PM – 8:00 PM	25,074	375	.116438412	0	.116438412	.116438412
7:00 PM – 8:00 PM	23,586	400	.156598973	0	.156598973	.156598973
7:00 PM – 8:00 PM	22,171	425	.1214925	0	.1214925	.1214925
7:00 PM – 8:00 PM	20,823	450	.116827188	0	.116827188	.116827188
7:00 PM – 8:00 PM	19,533	475	.139901044	0	.139901044	.139901044
7:00 PM – 8:00 PM	18,298	500	.018564054	0	.018564054	.018564054
7:00 PM – 8:00 PM	17,112	525	.006434243	0	.006434243	.006434243
7:00 PM – 8:00 PM	15,970	550	0	0	0	0
7:00 PM – 8:00 PM	14,870	575	.00404327	0	.00404327	.00404327
7:00 PM – 8:00 PM	13,808	600	.003751688	0	.003751688	.003751688
7:00 PM – 8:00 PM	12,781	625	.012207566	0	.012207566	.012207566
7:00 PM – 8:00 PM	11,786	650	.078863212	0	.078863212	.078863212
7:00 PM – 8:00 PM	10,823	675	.106893961	0	.106893961	.106893961
7:00 PM – 8:00 PM	9,888	700	.095561141	0	.095561141	.095561141
7:00 PM – 8:00 PM	8,979	725	.069552026	0	.069552026	.069552026
7:00 PM – 8:00 PM	8,095	750	.011371698	0	.011371698	.011371698
7:00 PM – 8:00 PM	7,235	775	.039091427	0	.039091427	.039091427
7:00 PM – 8:00 PM	6,398	800	.006570314	0	.006570314	.006570314
7:00 PM – 8:00 PM	5,581	825	.155082746	0	.155082746	.155082746
7:00 PM – 8:00 PM	4,784	850	.128121131	0	.128121131	.128121131
7:00 PM – 8:00 PM	4,005	875	.039188621	0	.039188621	.039188621
7:00 PM – 8:00 PM	3,245	900	.077346985	0	.077346985	.077346985
7:00 PM – 8:00 PM	2,501	925	.115349839	0	.115349839	.115349839
7:00 PM – 8:00 PM	1,774	950	.025037174	0	.025037174	.025037174
7:00 PM – 8:00 PM	1,062	975	.086036129	0	.086036129	.086036129
7:00 PM – 8:00 PM	364	1000	.035378616	0	.035378616	.035378616
8:00 PM – 9:00 PM	52,947	100	.062068088	0	.062068088	.062068088
8:00 PM – 9:00 PM	48,448	125	.28493393	0	.28493393	.28493393
8:00 PM – 9:00 PM	44,073	150	.175862824	0	.175862824	.175862824
8:00 PM – 9:00 PM	41,074	175	.12230893	0	.12230893	.12230893
8:00 PM – 9:00 PM	38,623	200	.265048038	0	.265048038	.265048038
8:00 PM – 9:00 PM	36,498	225	.032385041	0	.032385041	.032385041
8:00 PM – 9:00 PM	34,015	250	.115252645	0	.115252645	.115252645
8:00 PM – 9:00 PM	31,975	275	.232235344	0	.232235344	.232235344
8:00 PM – 9:00 PM	30,080	300	.424679464	0	.424679464	.424679464
8:00 PM – 9:00 PM	28,308	325	.267108551	0	.267108551	.267108551
8:00 PM – 9:00 PM	26,644	350	.183735538	0	.183735538	.183735538
8:00 PM – 9:00 PM	25,074	375	.330051385	0	.330051385	.330051385
8:00 PM – 9:00 PM	23,586	400	.215323588	0	.215323588	.215323588
8:00 PM – 9:00 PM	22,171	425	.020818955	0	.020818955	.020818955
8:00 PM – 9:00 PM	20,823	450	.05864686	0	.05864686	.05864686
8:00 PM – 9:00 PM	19,533	475	.210172306	0	.210172306	.210172306
8:00 PM – 9:00 PM	18,298	500	.196040298	0	.196040298	.196040298
8:00 PM – 9:00 PM	17,112	525	.228464216	0	.228464216	.228464216
8:00 PM – 9:00 PM	15,970	550	.314694733	0	.314694733	.314694733
8:00 PM – 9:00 PM	14,870	575	.407378932	0	.407378932	.407378932
8:00 PM – 9:00 PM	13,808	600	.453176744	0	.453176744	.453176744
8:00 PM – 9:00 PM	12,781	625	.462565685	0	.462565685	.462565685
8:00 PM – 9:00 PM	11,786	650	.435176416	0	.435176416	.435176416
8:00 PM – 9:00 PM	10,823	675	.31912678	0	.31912678	.31912678
8:00 PM – 9:00 PM	9,888	700	.139240124	0	.139240124	.139240124
8:00 PM – 9:00 PM	8,979	725	.094414252	0	.094414252	.094414252

8:00 PM – 9:00 PM	8,095	750	.190694628	0	.190694628	.190694628
8:00 PM – 9:00 PM	7,235	775	.136946346	0	.136946346	.136946346
8:00 PM – 9:00 PM	6,398	800	.070037996	0	.070037996	.070037996
8:00 PM – 9:00 PM	5,581	825	.097116245	0	.097116245	.097116245
8:00 PM – 9:00 PM	4,784	850	.048946898	0	.048946898	.048946898
8:00 PM – 9:00 PM	4,005	875	.11678831	0	.11678831	.11678831
8:00 PM – 9:00 PM	3,245	900	.01424864	0	.01424864	.01424864
8:00 PM – 9:00 PM	2,501	925	.04941343	0	.04941343	.04941343
8:00 PM – 9:00 PM	1,774	950	.02105222	0	.02105222	.02105222
8:00 PM – 9:00 PM	1,062	975	.058355278	0	.058355278	.058355278
8:00 PM – 9:00 PM	364	1000	.013782109	0	.013782109	.013782109
9:00 PM – 10:00 PM	52,947	100	.051240677	0	.051240677	.051240677
9:00 PM – 10:00 PM	48,448	125	.336368995	0	.336368995	.336368995
9:00 PM – 10:00 PM	44,073	150	.088193836	0	.088193836	.088193836
9:00 PM – 10:00 PM	41,074	175	.184707478	0	.184707478	.184707478
9:00 PM – 10:00 PM	38,623	200	.115310962	0	.115310962	.115310962
9:00 PM – 10:00 PM	36,498	225	.291990215	0	.291990215	.291990215
9:00 PM – 10:00 PM	34,015	250	.425845792	0	.425845792	.425845792
9:00 PM – 10:00 PM	31,975	275	.691360361	0	.691360361	.691360361
9:00 PM – 10:00 PM	30,080	300	.50573926	0	.50573926	.50573926
9:00 PM – 10:00 PM	28,308	325	.120831581	0	.120831581	.120831581
9:00 PM – 10:00 PM	26,644	350	.041015868	0	.041015868	.041015868
9:00 PM – 10:00 PM	25,074	375	.038605457	0	.038605457	.038605457
9:00 PM – 10:00 PM	23,586	400	.015026192	0	.015026192	.015026192
9:00 PM – 10:00 PM	22,171	425	.064420183	0	.064420183	.064420183
9:00 PM – 10:00 PM	20,823	450	.040879796	0	.040879796	.040879796
9:00 PM – 10:00 PM	19,533	475	.00501521	0	.00501521	.00501521
9:00 PM – 10:00 PM	18,298	500	.084675413	0	.084675413	.084675413
9:00 PM – 10:00 PM	17,112	525	.124777657	0	.124777657	.124777657
9:00 PM – 10:00 PM	15,970	550	.15453846	0	.15453846	.15453846
9:00 PM – 10:00 PM	14,870	575	.069863047	0	.069863047	.069863047
9:00 PM – 10:00 PM	13,808	600	.04713909	0	.04713909	.04713909
9:00 PM – 10:00 PM	12,781	625	.068793913	0	.068793913	.068793913
9:00 PM – 10:00 PM	11,786	650	.085550159	0	.085550159	.085550159
9:00 PM – 10:00 PM	10,823	675	.059521606	0	.059521606	.059521606
9:00 PM – 10:00 PM	9,888	700	.026184064	0	.026184064	.026184064
9:00 PM – 10:00 PM	8,979	725	.017125583	0	.017125583	.017125583
9:00 PM – 10:00 PM	8,095	750	.088057764	0	.088057764	.088057764
9:00 PM – 10:00 PM	7,235	775	.059988137	0	.059988137	.059988137
9:00 PM – 10:00 PM	6,398	800	.022607324	0	.022607324	.022607324
9:00 PM – 10:00 PM	5,581	825	.146996206	0	.146996206	.146996206
9:00 PM – 10:00 PM	4,784	850	.124641586	0	.124641586	.124641586
9:00 PM – 10:00 PM	4,005	875	.03839163	0	.03839163	.03839163
9:00 PM – 10:00 PM	3,245	900	.145032887	0	.145032887	.145032887
9:00 PM – 10:00 PM	2,501	925	.017844818	0	.017844818	.017844818
9:00 PM – 10:00 PM	1,774	950	.059541044	0	.059541044	.059541044
9:00 PM – 10:00 PM	1,062	975	.028477842	0	.028477842	.028477842
9:00 PM – 10:00 PM	364	1000	.036175607	0	.036175607	.036175607
10:00 PM – 11:00 PM	52,947	100	.38424676	0	.38424676	.38424676
10:00 PM – 11:00 PM	48,448	125	.270549218	0	.270549218	.270549218
10:00 PM – 11:00 PM	44,073	150	.226811918	0	.226811918	.226811918
10:00 PM – 11:00 PM	41,074	175	.133447362	0	.133447362	.133447362
10:00 PM – 11:00 PM	38,623	200	.475822946	0	.475822946	.475822946

10:00 PM – 11:00 PM	36,498	225	.200627855	0	.200627855	.200627855
10:00 PM – 11:00 PM	34,015	250	.343755739	0	.343755739	.343755739
10:00 PM – 11:00 PM	31,975	275	.720732388	0	.720732388	.720732388
10:00 PM – 11:00 PM	30,080	300	.366226992	0	.366226992	.366226992
10:00 PM – 11:00 PM	28,308	325	.098924053	0	.098924053	.098924053
10:00 PM – 11:00 PM	26,644	350	.069552026	0	.069552026	.069552026
10:00 PM – 11:00 PM	25,074	375	.125283066	0	.125283066	.125283066
10:00 PM – 11:00 PM	23,586	400	.123825156	0	.123825156	.123825156
10:00 PM – 11:00 PM	22,171	425	.148395799	0	.148395799	.148395799
10:00 PM – 11:00 PM	20,823	450	.086560976	0	.086560976	.086560976
10:00 PM – 11:00 PM	19,533	475	.257991754	0	.257991754	.257991754
10:00 PM – 11:00 PM	18,298	500	.292495624	0	.292495624	.292495624
10:00 PM – 11:00 PM	17,112	525	.224382068	0	.224382068	.224382068
10:00 PM – 11:00 PM	15,970	550	.137101856	0	.137101856	.137101856
10:00 PM – 11:00 PM	14,870	575	.073323154	0	.073323154	.073323154
10:00 PM – 11:00 PM	13,808	600	.019380484	0	.019380484	.019380484
10:00 PM – 11:00 PM	12,781	625	.113542031	0	.113542031	.113542031
10:00 PM – 11:00 PM	11,786	650	.25497874	0	.25497874	.25497874
10:00 PM – 11:00 PM	10,823	675	.327679852	0	.327679852	.327679852
10:00 PM – 11:00 PM	9,888	700	.270899117	0	.270899117	.270899117
10:00 PM – 11:00 PM	8,979	725	.20960858	0	.20960858	.20960858
10:00 PM – 11:00 PM	8,095	750	.04649761	0	.04649761	.04649761
10:00 PM – 11:00 PM	7,235	775	.083411891	0	.083411891	.083411891
10:00 PM – 11:00 PM	6,398	800	.269616156	0	.269616156	.269616156
10:00 PM – 11:00 PM	5,581	825	.160253467	0	.160253467	.160253467
10:00 PM – 11:00 PM	4,784	850	.033609685	0	.033609685	.033609685
10:00 PM – 11:00 PM	4,005	875	.047275162	0	.047275162	.047275162
10:00 PM – 11:00 PM	3,245	900	.085491842	0	.085491842	.085491842
10:00 PM – 11:00 PM	2,501	925	.153022234	0	.153022234	.153022234
10:00 PM – 11:00 PM	1,774	950	.154227439	0	.154227439	.154227439
10:00 PM – 11:00 PM	1,062	975	.065780899	0	.065780899	.065780899
10:00 PM – 11:00 PM	364	1000	.199228261	0	.199228261	.199228261
11:00 PM – 12:00 AM	52,947	100	.039246937	0	.039246937	.039246937
11:00 PM – 12:00 AM	48,448	125	.351609014	0	.351609014	.351609014
11:00 PM – 12:00 AM	44,073	150	.197128871	0	.197128871	.197128871
11:00 PM – 12:00 AM	41,074	175	0	0	0	0
11:00 PM – 12:00 AM	38,623	200	.291465367	0	.291465367	.291465367
11:00 PM – 12:00 AM	36,498	225	.408428627	0	.408428627	.408428627
11:00 PM – 12:00 AM	34,015	250	.263998343	0	.263998343	.263998343
11:00 PM – 12:00 AM	31,975	275	.315355652	0	.315355652	.315355652
11:00 PM – 12:00 AM	30,080	300	.256708793	0	.256708793	.256708793
11:00 PM – 12:00 AM	28,308	325	.501929255	0	.501929255	.501929255
11:00 PM – 12:00 AM	26,644	350	.470457838	0	.470457838	.470457838
11:00 PM – 12:00 AM	25,074	375	.417623179	0	.417623179	.417623179
11:00 PM – 12:00 AM	23,586	400	.335202667	0	.335202667	.335202667
11:00 PM – 12:00 AM	22,171	425	.293836901	0	.293836901	.293836901
11:00 PM – 12:00 AM	20,823	450	.206090158	0	.206090158	.206090158
11:00 PM – 12:00 AM	19,533	475	.286916688	0	.286916688	.286916688
11:00 PM – 12:00 AM	18,298	500	.275117336	0	.275117336	.275117336
11:00 PM – 12:00 AM	17,112	525	.227297888	0	.227297888	.227297888
11:00 PM – 12:00 AM	15,970	550	.093617261	0	.093617261	.093617261
11:00 PM – 12:00 AM	14,870	575	.045098016	0	.045098016	.045098016
11:00 PM – 12:00 AM	13,808	600	.022665641	0	.022665641	.022665641

11:00 PM – 12:00 AM	12,781	625	.080612704	0	.080612704	.080612704
11:00 PM – 12:00 AM	11,786	650	.101217832	0	.101217832	.101217832
11:00 PM – 12:00 AM	10,823	675	.002196584	0	.002196584	.002196584
11:00 PM – 12:00 AM	9,888	700	.010244248	0	.010244248	.010244248
11:00 PM – 12:00 AM	8,979	725	.026981054	0	.026981054	.026981054
11:00 PM – 12:00 AM	8,095	750	.060629617	0	.060629617	.060629617
11:00 PM – 12:00 AM	7,235	775	.057616603	0	.057616603	.057616603
11:00 PM – 12:00 AM	6,398	800	.316327592	0	.316327592	.316327592
11:00 PM – 12:00 AM	5,581	825	.072856622	0	.072856622	.072856622
11:00 PM – 12:00 AM	4,784	850	.115291523	0	.115291523	.115291523
11:00 PM – 12:00 AM	4,005	875	.101217832	0	.101217832	.101217832
11:00 PM – 12:00 AM	3,245	900	.048091591	0	.048091591	.048091591
11:00 PM – 12:00 AM	2,501	925	.083703473	0	.083703473	.083703473
11:00 PM – 12:00 AM	1,774	950	.06624743	0	.06624743	.06624743
11:00 PM – 12:00 AM	1,062	975	.043037503	0	.043037503	.043037503
11:00 PM – 12:00 AM	364	1000	.012421393	0	.012421393	.012421393
12:00 AM – 1:00 AM	52,947	100	.084830923	0	.084830923	.084830923
12:00 AM – 1:00 AM	48,448	125	.288102455	0	.288102455	.288102455
12:00 AM – 1:00 AM	44,073	150	.308143858	0	.308143858	.308143858
12:00 AM – 1:00 AM	41,074	175	.055750478	0	.055750478	.055750478
12:00 AM – 1:00 AM	38,623	200	.25237394	0	.25237394	.25237394
12:00 AM – 1:00 AM	36,498	225	.292204042	0	.292204042	.292204042
12:00 AM – 1:00 AM	34,015	250	.477280856	0	.477280856	.477280856
12:00 AM – 1:00 AM	31,975	275	.015998132	0	.015998132	.015998132
12:00 AM – 1:00 AM	30,080	300	.122172858	0	.122172858	.122172858
12:00 AM – 1:00 AM	28,308	325	.023229366	0	.023229366	.023229366
12:00 AM – 1:00 AM	26,644	350	.344125076	0	.344125076	.344125076
12:00 AM – 1:00 AM	25,074	375	.439452952	0	.439452952	.439452952
12:00 AM – 1:00 AM	23,586	400	.322120355	0	.322120355	.322120355
12:00 AM – 1:00 AM	22,171	425	.133855577	0	.133855577	.133855577
12:00 AM – 1:00 AM	20,823	450	.049802206	0	.049802206	.049802206
12:00 AM – 1:00 AM	19,533	475	.073906318	0	.073906318	.073906318
12:00 AM – 1:00 AM	18,298	500	.030246773	0	.030246773	.030246773
12:00 AM – 1:00 AM	17,112	525	.107127227	0	.107127227	.107127227
12:00 AM – 1:00 AM	15,970	550	.231749374	0	.231749374	.231749374
12:00 AM – 1:00 AM	14,870	575	.250838275	0	.250838275	.250838275
12:00 AM – 1:00 AM	13,808	600	.275097898	0	.275097898	.275097898
12:00 AM – 1:00 AM	12,781	625	.19259963	0	.19259963	.19259963
12:00 AM – 1:00 AM	11,786	650	.059793749	0	.059793749	.059793749
12:00 AM – 1:00 AM	10,823	675	.015862061	0	.015862061	.015862061
12:00 AM – 1:00 AM	9,888	700	.090623686	0	.090623686	.090623686
12:00 AM – 1:00 AM	8,979	725	.183288445	0	.183288445	.183288445
12:00 AM – 1:00 AM	8,095	750	.155588155	0	.155588155	.155588155
12:00 AM – 1:00 AM	7,235	775	.171625165	0	.171625165	.171625165
12:00 AM – 1:00 AM	6,398	800	.131814503	0	.131814503	.131814503
12:00 AM – 1:00 AM	5,581	825	.141883801	0	.141883801	.141883801
12:00 AM – 1:00 AM	4,784	850	.00307133	0	.00307133	.00307133
12:00 AM – 1:00 AM	4,005	875	.108565698	0	.108565698	.108565698
12:00 AM – 1:00 AM	3,245	900	.217034202	0	.217034202	.217034202
12:00 AM – 1:00 AM	2,501	925	.20912261	0	.20912261	.20912261
12:00 AM – 1:00 AM	1,774	950	.219230786	0	.219230786	.219230786
12:00 AM – 1:00 AM	1,062	975	.136946346	0	.136946346	.136946346
12:00 AM – 1:00 AM	364	1000	.157201576	0	.157201576	.157201576

